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ABSTRACT

Public laws 874 and 815 are intended to help relieve the financial burdens imposed on public school districts as a result of the tax-exempt nature of federal property. Where volume 1 presented a broad statistical analysis of the impact of P.L. 874 and 815 in 54 school districts, this volume contains indepth case studies of the laws' effects in each of five school districts. These studies were considered necessary in order to uncover ramifications of the two laws that would not be apparent from a statistical analysis. Separate case studies are presented for Brevard County, Florida; Montgomery County, Maryland; Philadelphia, Pennsylvania; Salina, Kansas; and Vallejo, California. (JG)

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Volume II

ENTITLEMENTS FOR FEDERALLY AFFECTED SCHOOL DISTRICTS UNDER PUBLIC LAWS 874 AND 815

Case Studies

Prepared for:

U.S. DEPT. OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
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SYMBOLS USED IN THE STUDY OF P.L. 874

F = total net entitlement, P.L. 874

F_e = net entitlement for intradistrict equalization

L = local revenues (including intermediate source)

S = state payments to district

N = average daily attendance = ADA

C = current expenses of education

E = foundation program for state aid in dollars per ADA (E^v represents variable unit program)

B = basic aid in dollars, equal to a fixed number of dollars per ADA times ADA

t_s = tax rate stipulated by the state for participating in state equalization aid

$\left.\begin{matrix} t_d \\ t_i \end{matrix}\right\}$ = district tax rate

k = proportioning factor used to allocate state aid funds

V = total taxable assessed value

v = average assessed value per family

R = ratio of residential to residential plus commercial property values

Subscripts

f = federally connected

$3(a)$ = pupils under Section 3(a) of P.L. 874

$3(b)$ = pupils under Section 3(b) of P.L. 874

n = nonfederal

d,i = district

r = residential

SYMBOLS USED IN THE STUDY OF P.L. 815

T = a time period during which a school district is potentially eligible for receiving P.L. 815 payments

P = payments to a school district under P.L. 815 during T

P_e = financial burden during T placed on a school district because of an increase in federally connected enrollment

N = average daily membership = ADM

Δ = augmentation during T

K = costs of building minimum school facilities during T, financed or repaid with revenues from property taxes or federal payments

L = residential property tax revenues for construction of school facilities during T

h = ratio of average number of 5(a)2 and 5(a)3 ADM to average total non-5(a)1 ADM

X = ratio of property taxes attributable to each 5(a)2 and 5(a)3 ADM to property taxes attributable to each nonfederally connected ADM

w = state average per pupil cost of construction minimum school facilities

SPPC = state per pupil costs of building minimum school facilities

Subscripts

f = federally connected pupils

1 = unhoused federally connected pupils under Section 5(a)1

2 = unhoused federally connected pupils under Section 5(a)2

3 = unhoused federally connected pupils under Section 5(a)3

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INTRODUCTION

To supplement the broad statistical analysis of Public Laws 874 and 815, given in Volume I, studies in depth of five school districts were conducted; they are contained in this volume. The studies were considered necessary in order to uncover the ramifications and operations of the two laws, which would not be apparent from an overall statistical analysis. Within the research budget, only a limited number of case studies were considered to be justified. Although it was realized that a truly representative sample was impossible with such a small number of cases, a great deal of care was taken in selecting the districts to be studied. The basic criteria used in the selection process were:

1. Stability of school district organization and boundaries. To simplify the manipulation of the data and to ensure greater accuracy in the analyses of changes over time, no districts were chosen which, during the time period considered in the study, had become unified or had experienced substantial changes in their boundaries. This requirement substantially reduced the number of districts under consideration.

2. Ratio of entitlement to current expense of education (C). Although it was realized that the districts with heavy entitlement were in the minority, only those districts with a fairly high ratio of F to C were chosen in order to be able to see the effect upon a district of federal impact and of P.L. 874 and 815 funds. The minimum ratio was originally set at 10% but was later reduced to 8% to provide enough districts that could meet the other criteria.

3. Size of district. Small districts were not chosen because they are too easily affected by small changes in factors not of concern to the study. For example, the construction of one new factory in a small community might cause a substantial change both in assessed values and the revenue received by the school district. As a result, a minimum of $1 million current expense of education was established.

4. Time at which impact occurred. Districts with recent growth in federal activity (i.e., since the late 1950's) were considered

desirable so that the before and after effects of impact could be more easily studied. Only two of the districts used as case studies were able to meet this criterion, however.

5. Type of federal impact. Examples of each of the major types of federal impact (i.e., military, industrial, and office employment) were chosen so that the effect of such differences could be analyzed. One school district in the Washington, D.C., area was required by the contract because of the area's unique character and heavy dependence upon federal office employment.

6. Geographic location. To make the sample more representative, an effort was made to achieve a geographic spread of the districts chosen.

Based upon the above criteria, the following communities were selected: Brevard County, Florida; Montgomery County, Maryland; Philadelphia, Pennsylvania; Salina, Kansas; and Vallejo, California. Brevard County as a major center for space exploration is an example of extraordinary expansion of federal activity occurring since 1950 when P.L. 874 and 815 were first written. Montgomery County was chosen because it is located in the Washington, D.C., area and because the Institute had good access to data about the county from previous research. Philadelphia provided an opportunity to study the problems of a large city and the effect of the 6% eligibility requirement. Salina was considered fairly typical of impact resulting from military bases and also had the advantage of the impact having occurred in recent years. Vallejo, California, is an example of fluctuation in the extent of impact and heavy dependence upon federal industrial activities. A case study in California was also considered desirable, since that state receives over twice as much money from P.L. 874 and 815 as any other state.

The authors would like to express their appreciation to the many persons in the district boards, and state departments, of education who were particularly helpful in providing information for the studies. Only some can be mentioned by name: Mr. Woodrow J. Darden, Superintendent of Public Instruction, Brevard County School District, and others of his staff; Mr. Homer O. Elseroad, Superintendent of Schools, Montgomery County, and Mr. Brian M. Benson and Mr. J. Gordon McDonald of his staff; Mr. Quentin L. Earhart, Maryland State Department of Education; Mr. D. E. Lindberg, Salina Board of Education; Mr. G. W. Reida, Kansas State Department of Public Instruction; Mr. Alvin E. Jones, Kansas State Property Valuation Department; Dr. C. Taylor Whittier, Superintendent of Schools, City of Philadelphia, and Mr. James K. Helms III of his staff; Mr. Russell Roddy, Department of Public Instruction, Commonwealth of Pennsylvania; Mr. Paul E. Crabb,

Superintendent of Schools, Vallejo Unified School District, California, and Mr. Everett I. Rolff and Mr. Francis L. Morris, of his staff.

The following persons, all associated with the Graduate School of Education, Stanford University, assisted in the conduct of the case studies.

James A. Kelly--Montgomery County, Maryland, and Philadelphia, Pennsylvania

Warren B. Carson--Brevard County, Florida, and Salina, Kansas

Joseph M. Cronin--Vallejo, California

A STUDY OF
THE OPERATION OF PUBLIC LAWS 874 AND 815 IN BREVARD COUNTY, FLORIDA

By: William N. Breswick

I INTRODUCTION

Why Brevard Was Selected for Case Study

The major reason for selecting Brevard County* for case study was that it has undergone, just within the period since Public Laws 874 and 815 were first written in 1950, an extraordinary expansion of its federal activity as well as its economic and public education affairs. The simultaneous experience of new legislation, and the conditions it was intended to deal with, afforded a good opportunity for analysis.

Moreover, Brevard has been and will doubtless continue to be the focal point of United States ventures into space. Since there is strong reason to believe that our national space program will affect additional communities in ensuing years, the detailed examination of this district's experience was expected to yield insights which might be applied to other districts in the future.

Brevard's expansion is by no means completed; the educational and economic repercussions from its federal activity will continue for some time. Brevard therefore also presented an excellent opportunity to study the effect of federal activity in a continuous growth situation. While the analytical questions posed in the case of Brevard were generally similar to those examined in the other case studies, the major variation in this study emphasized growth-derived and growth-affected problems and solutions.

Federal Activity in Brevard, 1940-1970's

The recent history of Brevard County is essentially the history of the federal activity it has hosted. During World War II the major federal installation in the county was the Banana River Naval Air Station. Planning for a U.S. missile test site, which traces back to late 1946, culminated in selection of Cape Canaveral as the launch area. By 1951, the whole installation then known as the Air Force Missile Test Center was in operation; it consisted of Patrick Air Force Base (formerly Banana River NAS) as the headquarters site, Cape Canaveral as the launch area, and the Atlantic Missile Range which now extends 10,000 miles into the Indian Ocean.*

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* In Florida, the 67 school districts are coterminous with the 67 counties.

During the early and mid-1950's, the race to perfect the ICBM served as the major impetus to a brisk growth of federal activity in Brevard. Two subsequent events which accelerated this growth to boom proportions were the launching of SPUTNIK I in 1957, and the challenge to manned lunar landing by 1970 set forth by President Kennedy in 1961. By now, the commitment of several billion dollars in federal facilities alone gives Brevard an assured position at least through the 1970's.

Economic Activity in Brevard County

Until about 1950, this 1,000-square mile county was rather sparsely populated with less than 25,000 people. Its economic activities then comprised some agriculture, very little manufacturing, and fairly high proportions of services and trade (see Table B1). Brevard's comparative lack of natural attributes did not encourage the county to participate in the substantial agricultural (largely citrus fruit) development which now characterizes the three contiguous counties to the west (Seminole, Orange, and Osceola). But its physical feature of a long, narrow configuration lying lengthwise on the coast explains why tourism and related services were then the slightly dominant features of an otherwise low-income and not very dynamic economy (see also Table B2).

Federal activities in the past fifteen years have virtually transformed the county. In the decade from 1950 to 1960, Brevard's population increased by 370%, the highest growth rate of any U.S. county. Construction of homes, stores, and other commercial facilities responded rather promptly to that growth. Today, federal activity accounts for nearly half the current employment, and has been the primary impetus toward higher average incomes, dwelling-unit values, educational attainments, and the other classic consequences of economic growth.

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* Today, the whole complex of activities may be designated generically as the Eastern Test Range, and includes the John F. Kennedy Space Center, NASA (Merritt Island); Cape Kennedy Air Force Station (formerly Cape Canaveral Missile Test Annex); the Air Force Eastern Test Range (formerly Atlantic Missile Range); and Patrick Air Force Base (headquarters).

Table B1

BREVARD COUNTY EMPLOYMENT, 1950

Agriculture and forestry	1,540
Transportation, communication, and public utilities	429
Construction	771
Manufacturing, durable and nondurable	422
Trade, wholesale and retail	2,099
Finance, insurance, and real estate	212
Services	1,994
Government	629
Other	174
Total	8,270

Table B2 gives some selected numerical measures of this transformation. Especially to be noted is the comparative spurt in per capita income. Although the growth since 1960 is not readily measurable, it may be noted that the major emphasis on (nonmilitary) space activities is extremely recent, and very substantial.

Table B2

SELECTED ECONOMIC DATA FOR BREVARD COUNTY, STATE OF FLORIDA,* AND UNITED STATES 1950-1960

		1950	1960	Increase 1950-60 (percent)
Population	Brevard	23,653	111,435	370%
	Florida	2,771,305	4,951,560	80
Median age	Brevard	33.7	26.5	
	Florida	30.9	31.2	
Median years school completed (over-25 pop.)	Brevard	9.8	12.1	
	Florida	9.6	10.9	
Per capita income	Brevard	$1,019	$2,319	125
	Florida	1,314	1,985	50
	U.S.	1,491	2,223	50
Median family income	Brevard	2,079	6,123	200
	Florida	2,384	4,722	100
Median value owner-occupied dwellings	Brevard	5,683	13,300	135
	Florida	6,612	11,800	80
Labor force	Brevard	8,679	41,510	380
Unemployment rate	Brevard	4.7%	4.1%	
Total employment	Brevard	8,270	39,822	
Agricultural employment	Brevard	1,341	1,118	
	Florida	123,194	105,509	

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* See footnote, p. 16.

Sources: 1950 and 1960 data from respective U.S. Census Reports.

II COSTS AND REVENUES FOR EDUCATING FEDERALLY CONNECTED PUPILS

The Basic Cost Formula

The fundamental task in this case study was to accumulate and analyze the relevant data on Brevard's school costs and revenues, and to evaluate federal payments in relation to the financial burden of educating federally connected pupils. Computations were made to determine whether P.L. 874 payments have equalized the local (current account) funds available for each federally connected pupil with those available for each nonfederal pupil (see discussion in Volume I). When the amount of federal money required to equalize the local current-cost burden is calculated, and this amount (F_e) is compared with the actual money received (F), it then becomes possible to conclude whether and to what extent this major objective of P.L. 874 has been achieved. All the data required to compute F_e for FY 1951-64, and to note the extent to which equalization has occurred in Brevard County, is set forth in Appendix Table B-A.*

Have Federal Payments Equalized Local Costs?

The year-by-year record of whether Brevard's P.L. 874 payments have been greater or less than those necessary to equalize local costs is given on line 44 of Appendix Table B-A. It appears that Brevard experienced several small deficits and small surpluses in the first half of the period, and fairly substantial surpluses in the latter half (excluding Section 4 effects, see p.14).

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* While Appendix Table B-A is so arranged that the computational steps are self-explanatory, some comments may be necessary on the derivation of the amount of local revenues (for school support and maintenance) from private residences occupied by federally connected people (L_f, line 27). Since local school revenues in Brevard County consist only of property taxes, and since tax revenues are exactly proportional to assessed valuation, total local revenues may be distributed between residences and nonresidences on the basis of the respective assessed valuations, viz.: $L_f = L \times V_r/V$ (line 26). Revenues from residences may then be further distributed between federally connected and nonfederally connected inhabitants on the basis of the proportion of Section 3(b) pupils to total pupils occupying private residences, viz.: $N_{3(b)}/N-N_{3(a)}$ (line 23).

The summary result has been a net surplus from federal funds for the entire period.

Of course, neither that summary result nor any individual year's record should be taken out of proportional context. For example, the overall surplus should properly be viewed against total P.L. 874 (Section 3) payments of over $9 million during the period. Conversely, the deficits in 1952 and 1953 are small in absolute terms but substantial in relative terms: they are about one-third of the amounts which were theoretically needed for full equalization. In addition to the need for interpreting in context, it should further be borne in mind that the computation of L_f involves several assumptions.* Inasmuch as the extent of possible biases in and from these assumptions cannot be accurately determined, the resulting difference between F and F_e (the surplus or deficit) should be viewed as only an approximation.

The explanation for a given district's equalization experience may be traced largely to certain legal provisions for computing entitlement. It will be recalled that in P.L. 874, the local contribution rate (LCR) is calculated with a two-year lag. Furthermore, since state aid is computed on the basis of the prior year's ADA, another one-year lag is introduced.

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* The nonresidential property valuation figure for each year includes commercial and industrial property, and raw (undeveloped) land. If the amount of the latter item were known, it would be proper to exclude it from the calculations, because its presence has the ultimate effect of overstating the theoretical federal obligation (F_e).

Also, it is recognized that the pupil-proportion is only an approximation of the residence proportion (federal to total in each case), and is based on the assumptions that average values per residence and average number of public school pupils per family are the same for federal and nonfederal families. The use of the pupil-proportion may have introduced biases in the calculated value of L_f as follows:

1. Downward, if the average value of federally connected residences is actually higher than nonfederal.
2. Upward, if the average number of school children per federal family is actually higher than nonfederal.

Although both those conditions may in fact prevail in Brevard, their measure is not available. Since they yield opposite effects on L_f they have been assumed to largely cancel out.

In addition to these lag problems, it will also be recalled that Section 3(b) students are paid at one-half the rate for 3(a) students because the law embodies the asumption that local revenues everywhere are derived 50% from residences and 50% from nonresidences, whereas the actual ratio may differ widely. And finally, a district may receive one (the highest) of three contribution rates: the comparable-district LCR, one-half the state average C (current expenses of education), or one-half the national average current expense,* and these may differ considerably. For all those reasons, it would be somewhat surprising if exact equalization were revealed for any district. Where continuous growth prevails, it would be virtually astounding--and of course, Brevard is just such a growth district.

It appears that Brevard derived the sizable surpluses of recent years largely by the application of the relatively high 1/2 national current expense rate. Using 1964 as an example, it will be noted that whereas the local funds available per nonfederal student were $171.90, the entitlement rate granted was $199.95. This means that each 3(a) pupil yielded a surplus of $28.05 ($199.95 - $171.90); and each 3(b) pupil provided a surplus of $13.90, derived as follows:

Local funds per nonfederal student	$171.90
Local funds per 3(b) student	-85.80
874 payment required for equalization	86.10
Actual 874 payment (1/2 the 3(a) rate)	100.00
Difference (surplus) per 3(b) pupil	$ 13.90

Calculations of this sort for other years reveal a similar explanation in terms of use of the 1/2 the national current expense rate.

Even though the explanation for Brevard's individual-year and overall surpluses is effectively given by the fact that their entitlement rate was high, it is interesting to carry the analysis somewhat further by looking at the effect of the law's stipulation that the 3(b) rate be one-half the 3(a) rate. In 1964, for example, Brevard County showed a residential valuation ratio of 64%, while its local funds per federal student were only 50% of the funds per nonfederal student. But that was to be expected, because the ratio of the 3(b) to the 3(a) payment would have been equal to the ratio of residential to total property, only if there had been no or few federally connected 3(b) families (see further discussion in Volume I). Thus, even if Brevard had been paid only the LCR during this period, no surplus would have arisen.

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* Brevard received 1/2 the state current expense for 1954 and 1955, and 1/2 the national current expense rate thereafter (see lines 36, 37, and 38).

The overall conclusion to be drawn from the examination of the role of federal payments to Brevard is that P.L. 874 has clearly provided intra-district equalization over the period as a whole. This suggests that, for this district, the various provisions and assumptions in the application of P.L. 874 appear to have worked out rather well to fulfill the law's intent. But there is an additional facet of P.L. 874 which must now be considered, namely, Section 4.

Section 4 Payments

Inasmuch as part of Section 4 payments were excluded from the foregoing calculations, it is necessary to note how Section 4 affects the general conclusion about equalization in Brevard. To begin with, Section 4 payments have, at least since 1955, never been a major factor in total national P.L. 874 payments (less than 1% in 1963). But since Brevard County receives a substantial portion of the total national Section 4 money (about one-half in 1963), this money has generally constituted an important part--typically one-third in recent years--of the county's total P.L. 874 receipts (see lines 35 and 42).

The intent of Section 4 is to confront the problem of "sudden and substantial increases" in a district's federally connected enrollment; to accomplish this intent, the law provides for a special contribution rate for Section 4 pupils. Since Section 4 implies that special financial burdens arise from rapid growth, the Section 4 contribution rate is usually higher than a district's Section 3 rate. Where a district is experiencing rapidly rising costs as well as rapidly increasing enrollments of federally connected pupils, the difference in rates can be substantial. Thus, the contribution rate for Brevard's Section 4 ADA has been considerably higher than their Section 3 rate (see lines 34 and 36).

In the above analysis of whether P.L. 874 payments to Brevard have equalized the local cost burden, it was necessary to confine the basic cost calculations strictly to the Section 3 element, and to exclude the special intent and special burden assumptions of Section 4. For this reason, the total actual P.L. 874 payments to Brevard were reduced, in the calculations, by the amount of the difference between the Section 4 entitlement and the equivalent Section 3 entitlement for the new (Section 4) pupils each year. In this manner, the question of equalizing local costs was strictly isolated from the separate question of meeting special burdens arising from sudden and substantial increases.

Having sorted out the Section 4 excess element from the Section 3 analysis, it is appropriate to ask whether those excess payments have offset whatever special burdens Brevard has encountered from its continuing sudden and substantial increases. The answer to that question is not clear; for it is not apparent that Brevard has incurred any special costs attributable strictly to the rate of growth in federally connected enrollment. To be sure, had Brevard received only an LCR (instead of the 1/2 national C rate) for all its federally connected pupils, it would have encountered a financial burden from the fact that LCR determinations are for the second prior year. But since that time lag problem (similar to the one-year lag for calculating state aid) is inherent in the structure of P.L. 874, no district can expect full coverage of current costs for its Section 3 pupils. And inasmuch as Brevard actually received the relatively higher 1/2 national C rate, that time lag burden was essentially removed. Thus, the excess element of Section 4 has doubtless constituted part of the basis for Brevard's being able actually to improve the quality of its education in a period of growth and adjustment--and this is perhaps just the sort of circumstance which Section 4 was intended to cover.

Trends in P.L. 874 Entitlement

In the period 1950-64, Brevard's total public school enrollment increased tenfold, from about 4,000 to nearly 40,000. The number of federally connected pupils increased at nearly five times that rate, rising from 10% of total enrollment to nearly 50% at present.

Since the federal facility has never provided for any considerable on-base residence, Section 3(a) children have never been more than a minor part of the total federal pupil population, and today constitute only about 10% of the 18,000 total federal enrollment.

Brevard County has never qualified for Section 2 entitlement, although there is some current contemplation of investigating that possibility. While Section 4 entitlements have been substantial, as discussed above, the district does not identify pupils by this classification because such an identity is highly transitory: a given year's Section 4 ADA becomes Section 3(a) or 3(b) ADA the following year. In sum, for purposes of overall description, the county may properly be identified as being and having been a predominantly Section 3(b) district.

Comparative Trends in Education

During this period 1950-64, Brevard's annual expenditures per pupil increased faster than those of other Florida counties. This relative rise accounts for Brevard's moving from the low end of the state's county array to an upper-middle position at present (lines 5 and 6, Appendix Table B-A). In 1951, Brevard's C/N was $154 when the state average was $180; by 1962, the state average had increased by 83% to $329, while Brevard had risen by 106% to $333.

Another comparison with state data indicates that in regard to teacher salaries, Brevard ranked 25th out of 67 counties in 1950, and rose to 16th in 1964. In spite of this up-ranking, Brevard remains below the Florida average teacher salary. This is doubtless attributable to the high proportion of beginner teachers, which in turn is another consequence of continuous and substantial growth.*

Quality of Education

The quality of Brevard's public educational program has definitely been affected by the federal activity. The effect is attributable mainly to the change in the characteristics of the population which the federal activity has brought in.

Prior to the federal impact, the indigenous population reflected nonurban levels of family income, years of school completed, etc. (see Table B2). The new population tends to be cosmopolitan, possesses more education, and enjoys above-national-average incomes. Many of these people are college graduates; many are themselves currently attending college. All of them desire public school programs which will prepare their children for advanced education.

The original educational program in Brevard was designed to fulfill the needs and aspirations of the pre-impact milieu. While it offered a college preparatory program, the curriculum was geared essentially to the terminal pupil. The present program continues to provide for the terminal student, but it has considerably increased the academic offerings. The proportion of students who go on to advanced education has risen from less than 30% to more than 70% today. Although a portion of this increase is attributable to the establishment of Brevard Junior College in 1961, enrollment in nonlocal higher education institutions by Brevard high school graduates has also increased since 1950.

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* It is also another example of the strong influence of Dade County (Miami) in Florida's education (and other) statistics. This influence is manifested generally by the state average for a given datum lying high on a county distribution array (the mean being higher than the median).

Teaching staff increased from 150 to 1,500. The ratio of pupils per teacher, however, has been maintained at moderate levels throughout the period, and supporting staff have increased in proportion to enrollment (lines 2 and 3). Since the opposite effect is customarily encountered in regard to both these measures when growth rates increase, Brevard has relatively advanced in these quality aspects of education.

The qualifications of the district's teaching personnel have increased as well as their numbers. In 1950, about 13% held no degree, 77% had a bachelor's degree, 10% held a master's, and none had a doctorate. In contrast, there are at present no non-degree teachers, 75% are A.B.'s, 22% have an M.A., and 3% hold doctorates. Teacher recruitment has been broadened from just in-state sources to a regional approach; in addition, many areas of the country are now represented by Brevard's women teachers who have accompanied their husbands to jobs at the federal activity.

The curriculum has been modified at all levels. In contrast with little innovation prior to 1950, the pattern now is one of constant change, new course offerings, restructuring of grade levels, and application of curriculum designs as they are developed locally or elsewhere.

State Aid

For most of this period, state aid has comprised somewhat more than 50% of total local, state, and federal revenues, for both current and capital account, to the district. The structure of the state aid programs is such that there is no differentiation between federally connected and nonfederally connected pupils.

Of the eight items in the overall program of state aid, the State Foundation Program accounts for approximately 80% of the state's total school expenditures. Within the Foundation Program, which applies to both current and capital account, there is the State Minimum Foundation Program which is restricted to current expenditures only. Under recent revisions of the statutes, the combined counties now contribute 25% of the Minimum Foundation Program, and the state contributes the remaining

75%. Each county's share is computed on the basis of an index of taxpaying ability derived from five elements and weighted as follows:

Element	Weight
Sales tax returns	.3654
Gainfully employed workers (excluding government and farms)	.2442
Value of farm products	.0586
Valuation of RR & telegraph property	.0461
Auto tag sales	.2857
	1.0000

(The sum of the counties' percentages of the total for each of these elements is 100%, and the sum of the county indexes of taxpaying ability is 100. Currently, Brevard's index is 2.5555.)

Florida's system of an index of taxpaying ability was developed in recognition of the absence of a statewide standard for determining the comparative taxpaying ability of the counties. Since there has always been a wide variation in assessment practices among Florida counties, the customary device of property valuation could not yield an objective standard (see footnote, p. 24).

It is clear that the elements used (and the weights applied) in the compilation of the index emphasize income rather than property. Therefore, the minimum Foundation Program is a mechanism built around equalizing income rather than property, with respect to school expenditures. That being the case, it may be concluded that there is little possibility that P.L. 874 and 815 have been or might become the mechanism for converting part of a heretofore state burden into a federal burden, for this could arise only if the state aid program strived to equalize property valuations and revenues therefrom; i.e., if the state were already compensating Brevard for the foregone revenues from federal property, then federal compensation might permit the state to reduce its compensation and thus shift the burden--but such is not possible, in view of the income-orientation of the program.

Special Considerations

Economies of scale that Brevard might have encountered during this period are not discernible. The firm identification of scalar economies is almost impossible in a situation of continuous growth such as this county has witnessed.

There are several special considerations of growth (dynamic change as distinguished from scalar or level-of-activity change) that should be noted. First, Brevard's average teacher salary continues to remain below the state average (1964: Brevard $5,849; Florida $6,139; 1951: Brevard $2,769; Florida $3,029). As indicated earlier, this is probably due to the high proportion of new (and beginner) teachers employed each year, generally at the lower salary scales. Second, there have been practically no double sessions during this period. While double sessions tend to diminish expenditures per pupil, they also tend to lower the quality of education. It speaks well for Brevard that the district was able and chose to avoid this step.

There do not appear to have been any special costs associated with the federal activity and federal assistance. There have been, of course, new administrative costs arising from the application of the law. But unlike some federally affected districts, Brevard has not encountered any disproportionate administrative costs. (For that reason, the foregoing equalization calculations contain no adjustment for administrative costs.)

III THE INFLUENCE OF FEDERAL CONNECTION ON LOCAL EFFORT AND PERFORMANCE

Local Financial Effort

Chart B1 portrays the growth of P.L. 874 funds received, along with the increase of federally connected pupils from 1950-64. During this period, annual funds received have grown from $33,000 to over $2.5 million, while federally connected pupils have risen from 395 to nearly 18,000. From an examination of the respective growth rates (Chart B1 is logarithmic) it is clear that federal funds have grown at least as fast as the federal pupils have increased. Since the time period in question was a time in which the cost of educating every pupil was increasing, the federal funds would on this account have had to increase faster than federal students, in order for federal payments to have accounted for the actual local cost-burden of educating federal children. This appears to have been generally the case with Brevard. (The fact that federal funds are never expected to fill the whole local burden for federal students, but rather only the foregone-revenue gap, does not alter the validity of this growth-rate comparison.)

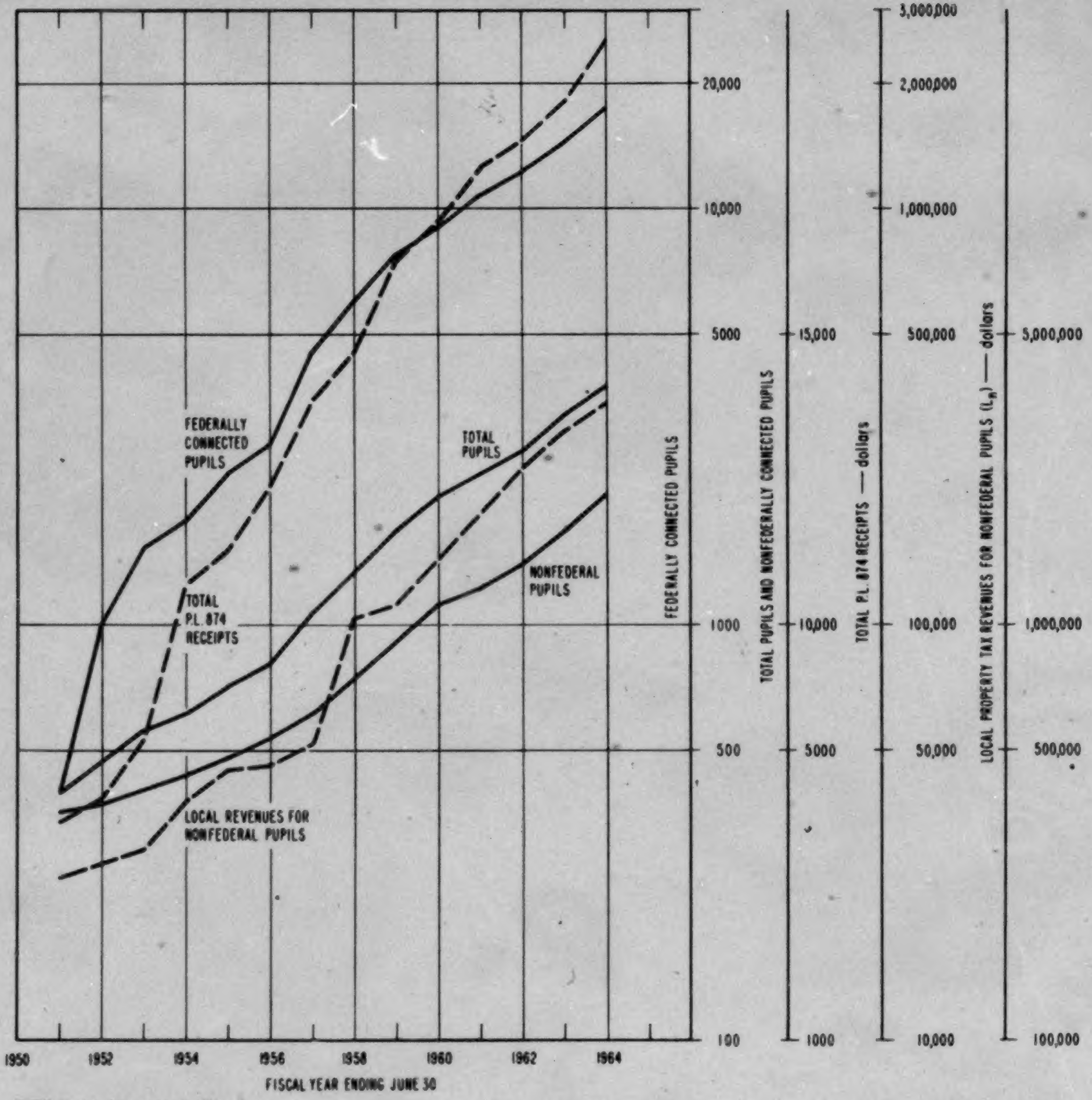
With respect to nonfederal pupils, Chart B1 permits a corresponding determination of whether local revenues for nonfederal children have kept pace with the burden of educating those children. This too appears to have been generally the case, including the factor of rising costs per pupil.

In sum, it appears that since federal funds "paid the local way" for federal children, local funds were expected just to pay the local way for nonfederal children, and this they did. Furthermore, both federal and nonfederal funds increased continuously, in response not only to increased enrollments but also to increased per pupil costs.

On the matter of local effort, it should be noted (see Chart B2) that the tax millage dropped substantially in 1958 and, although it has since risen, now stands at a lower level than at the beginning of the period. The explanation for this, of course, lies in the change in property assessments. In 1958, the assessment ratio was more than doubled (from 35% to 74%) and a general reassessment was undertaken, accounting for a sixfold increase in assessed valuation in that year alone. Assessed

CHART B1

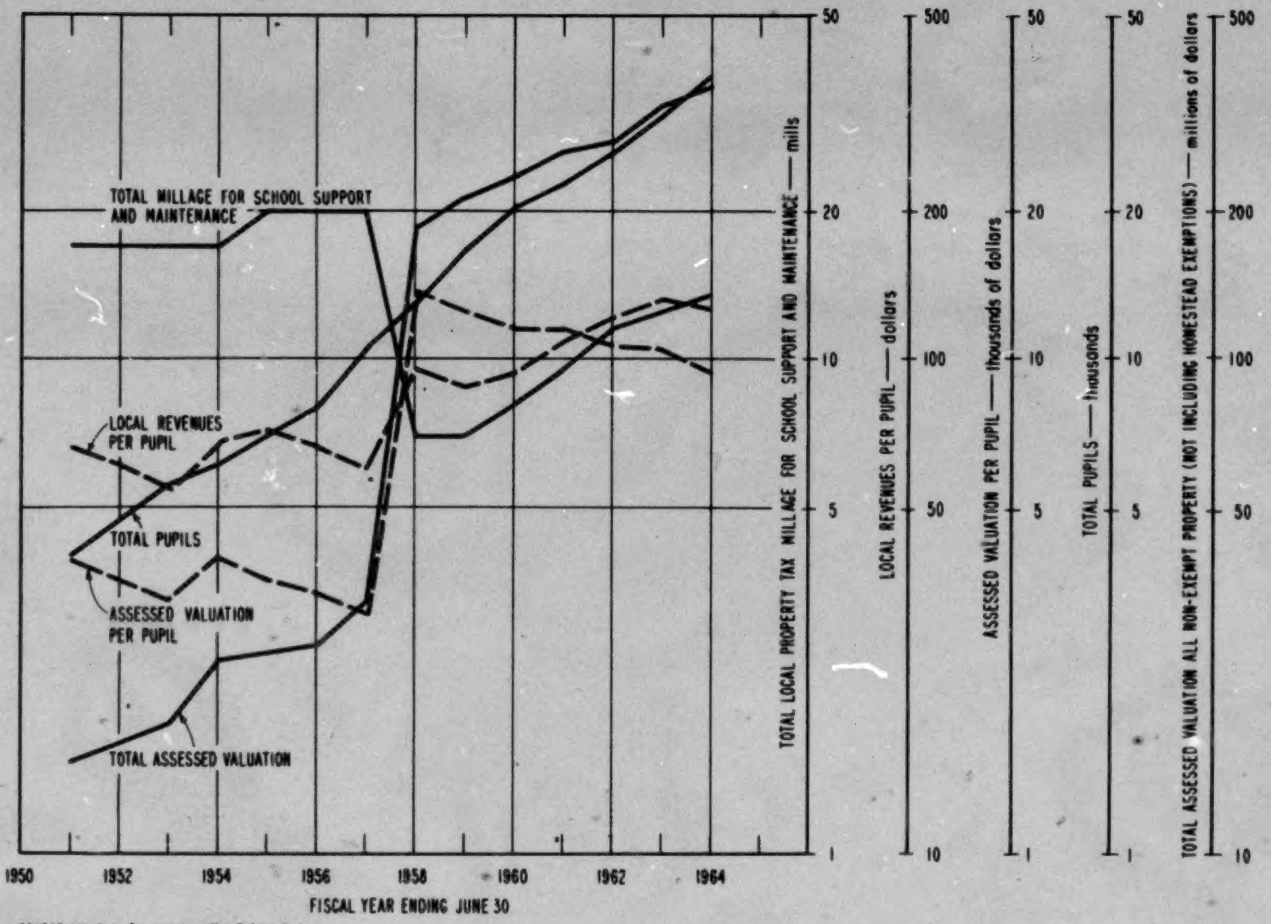
FEDERAL PAYMENTS DATA FOR BREVARD PUBLIC SCHOOLS 1950–1964



SOURCE: All data from Appendix Table B-4

CHART B2

LOCAL FINANCIAL DATA FOR BREVARD PUBLIC SCHOOLS 1950-1964



SOURCE: All data from Appendix Table B-A valuations have since continued to rise, and today Brevard County ranks high among Florida counties with respect to its assessment ratio.*

The consequence of all this on Brevard's local effort has been that local revenues have been made to expand nearly commensurate with the increase in enrollment plus increased costs per pupil, and this in the face of a constantly increasing proportion of federal pupils. Thus, local revenues per pupil (all pupils) doubled during the period, while C/N grew to 2.4 times the initial figure (see lines 29 and 5, and Chart B2). It may be concluded that the county has effectively translated its growth in financial ability into a growth in financial effort, as evidenced by the fact that its quality of education has been enhanced to the point that the district has definitely risen within its state educational environment.

Influence of Federal Activity on Educational Standards and Performance

Brevard's federal activity has indeed influenced educational standards, performance, and aspirations. But most of the readily identifiable consequences are manifested at the college level--for example, the establishment and rapid growth of Brevard Junior College, and the several college-level ventures and plans utilizing instructors and students from Eastern Test Range employees. In addition, whatever have been the effects at the public school level, they are generally not quantifiable.

Nevertheless, there have been effects. Several were mentioned earlier, such as the teaching wives of federally connected employees. A few additional items are noted here.

1. The redesign of the curriculum structure to provide for a "tracked" program, geared to individual progress rates, has been carried out.

2. Programs of in-service training in cooperation with colleges have been undertaken.

3. A general climate and disposition for seeking innovation--as opposed to acceptance of the status quo--is developing.

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* Florida law makes assessment mandatory at "true value" (100% of market) but no state authority exists to ensure uniformity among the 67 counties. In 1963 (as of FY 1963-64), 16 counties assessed at a ratio of 74% or higher; the statewide weighted average ratio was then approximately 57%.

IV SUMMARY AND CONCLUSIONS

It is no exaggeration to say that Brevard County today is simply a different place from what it was in 1950. Today there are far more people, more and better jobs, a prevalence of new homes, new roads, and new stores.

But nowhere is Brevard's transition quite so evident as in its public school system. The transition has been largely in terms of measurable growth, to be sure: from 4,000 to 40,000 pupils; from 150 to 1,500 teachers; and over $30 million worth of new school buildings in fifteen years. Yet, while not so readily manifested in numerical terms, the quality of the public school program and of the staff who carry it out have also undergone positive change. Demands for educational services have mounted during this period; they will continue to mount in forthcoming years.

Public Laws 874 and 815* have been a vital part of Brevard's pacing the supply of its education with the demand for education, using the term in both the customary economic sense of more pupils and more classrooms, as well as in the educators' sense of more and better instruction, and better (and inevitably costlier) school plant. In the latter sense, the pupil per teacher ratio has not grown larger, supporting staff have increased proportional to enrollment, and curriculum modification has been undertaken commensurate with the new needs of the population. Part of Brevard's ability to upgrade its educational system has been due to its qualifying under (and receiving the relatively high entitlement rates of) Section 4 of P.L. 874. And, however fortuitously, the terms of application of Section 3 of that law have matched well with the county's circumstances, to the point that the local revenues denied the district by federal property ownership have been somewhat exceeded by Section 3 funds alone. During the period under study, federally connected enrollment has risen from 400 to nearly 18,000 pupils, over $10 million has been received in P.L. 874 funds, and nearly $7.5 million has been obtained under P.L. 815.

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* The effects of P.L. 815 on Brevard County are discussed in Volume I, Chapter 6.

Brevard County and its contiguous impact-area counties have made extensive effort to cope with and plan for community adjustment to the federal activity. In the absence of such response and foresight, the result of federal expansion would have been too great a burden. In matters of education, one indication of the success of local adjustment speaks for itself: there have been virtually no double school sessions in this whole period.

With further regard to local response, it should be noted how assessment policies and practices within the county have been altered. In 1957, Brevard more than doubled its assessment ratios; coupled with a broad reassessment of all property, the tax base was increased sixfold in one year, and continues to expand reasonably proportional to local economic growth. While it is impossible to say with certainty that any community is taxing itself fully commensurate with its ability, Brevard's local revenues have kept pace with its educational demands.

Substitution of federal funds for local or state aid has been at a minimum. Such substitution that might be inferred from the record is probably an indirect manifestation of the total economic improvement in Brevard County in relation to other counties in the state.

All in all, the experience of Brevard County under these two laws appears to have been a case where the local situation has blended well with both the intent and terms of the law. By receiving one-half the national average C for its Section 3 rates, and by being continuously eligible for Section 4's sudden and substantial increase provisions, the county has found federal assistance to be reasonably equal to handling a massive school finance problem. Given the magnitude and continuous growth of that problem, the district has adjusted rather well. Yet the federal impact by now is so great that even if it leveled off today, the district would not be able to fill the gap itself for a long time, if at all.

The argument has been put forth that economic growth *per se* will provide the basis for financing the education of federally connected pupils in federally affected areas. Brevard County stands as a prime example of an area in which the federal presence has caused substantial economic growth. Since 1958 alone, population has more than doubled and income per capita has risen twice as fast as the average in Florida. But, despite this clear case of economic boom, there appears to be no substantiation for the argument that growth in itself is adequate to finance the education of the public school population without the supplementary funds of P.L. 874, or without an increased local effort beyond that which could reasonably be expected.

In the first place, property values--the legal basis for local revenues--have not increased as fast in Brevard as the school population. From 1958 to 1964, public school population has increased 280%, while assessed values have increased by only 190%. Local effort in the form of tax rates, however, has also almost doubled, providing more than an adequate increase in local revenues per pupil. Of course some of the increase in tax rates represents increased ability, inasmuch as assessed values traditionally rise more slowly than market values due to lag in assessment practices. Nevertheless, much of the increase does represent an expansion of local effort, a reflection of a desire to upgrade education, and cannot legitimately be assigned solely to ability.

In general, the cost-revenue picture in Brevard shows no indication that growth in economic activity is readily translated into an increased local financial ability per pupil in a way to relieve the federal government of its obligations under P.L. 874. The evidence is not fully conclusive in this regard, to be sure, since it cannot be said with certainty how much of the increased income not captured by assessments can be legitimately regarded as additional ability to finance education. However, evidence with regard to assessed values indicates that the burden of proof must rest upon those who claim that growth does generate such ability. It may be said finally, that if the evidence is so weak in the case of Brevard County, the fastest growing federally affected area in the country, it may be expected to be even weaker in most other areas.

Table B-A

STATISTICAL DATA RELATIVE TO PUBLIC SCHOOLS IN BREVARD COUNTY SCHOOL DISTRICT FLORIDA

Line	Item Description	Symbol	Data Source	Units	Fiscal Year Ending June 30 1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Selected characteristics																		
1.	Total pupils	N	Brevard Sch. Supt.	Pupils	3,913	4,699	5,571	6,092	7,086	8,008	10,674	13,483	16,972	20,254	23,024	26,205	31,351	37,904
2.	Avg. no. pupils per teacher - Brevard	N/Teacher	State Sch. Supt.	"	27	28	27	25	25	27	28	26	25	25	25	26	25	25
3.	" " " " " - Florida	"	" " "	"	25	24	25	25	25	25	25	25	25	25	25	25	25	25
4.	Total curr. expend. of education	C	" " "	$000	629	790	1,131	1,345	1,596	1,940	2,438	3,984	5,019	6,517	7,463	8,718	11,134	14,032
5.	Curr. expend. per pupil - Brevard	C/N	" " "	$	153.72	182.90	198.29	217.70	225.25	242.20	228.36	295.48	295.70	321.76	324.14	332.68	355.14	370.20
6.	" " " " - Florida	S	" " "	$	179.82	194.40	201.56	217.34	226.21	242.69	247.20	291.78	294.16	299.78	309.39	329.43	342.23	372.12
7.	Total state Supp. & Maint. funds to district	"	" " "	$000	379	515	687	817	886	1,307	1,699	2,787	3,192	3,923	4,124	4,853	5,904	7,719
8.	% Revenue receipts (curr. & cap.) from - Federal	RR_f	" " "	%	5	9	14	25	18	22	22	27	30	18	19	18	21	17
9.	" " " " " " " - State	RR_s	" " "	%	56	59	60	48	52	53	55	53	47	57	51	51	48	52
10.	" " " " " " " - Local	RR_l	" " "	%	39	32	26	27	29	25	23	20	23	25	30	31	32	31
11.	Total revenue receipts	RR_t	" " "	$Million	0.8	1.1	1.4	2.1	2.2	2.9	3.6	6.8	7.8	9.4	9.7	11.4	14.6	18.6
P.L. 874 analysis data																		
Federally connected pupil data																		
12.	No. of nonfederal-connected pupils	N_n	Brevard Sch. Supt.	Pupils	3,518	3,677	4,027	4,313	4,785	5,305	6,136	7,493	9,148	11,196	12,218	13,978	16,833	20,265
13.	Total federal-connected pupils	N_f	" " "	"	395	1,022	1,544	1,779	2,301	2,703	4,538	5,990	7,824	9,058	10,806	12,227	14,518	17,639
14.	No. of 3(a) pupils	$N_3(a)$	" " "	"	74	143	334	408	411	81	112	133	356	658	772	926	1,625	1,912
15.	No. of 3(b) pupils	$N_3(b)$	" " "	"	321	879	1,210	1,371	1,890	2,622	4,426	5,857	7,468	8,400	10,034	11,301	12,893	15,727
16.	Proportion federal to total pupils	N_f/N	Line 13 ÷ Line 1	%	10	22	28	30	33	34	42	44	46	45	47	47	46	47
Local revenues data																		
Residential vs total assessed valuation																		
17.	Total local millage for school S. & M.	t_d	State Compt.	Mills	17	17	17	17	20	20	20	7	7	8.1	9.5	11.5	12.5	13.5
18.	Assessed value residential (& pers.) prop.	V_r	Brevard Tax Ass'r.	$Million	6.1	5.9	6.4	8.6	8.9	9.4	11.5	137.3	117.3	129.1	159.6	189.9	211.6	?
19.	Valuation nonres. (& pers.) prop.	V_c	" " "	"	9.2	10.9	11.8	16.0	16.6	17.4	21.4	48.2	95.9	105.4	105.0	88.4	118.4	?
20.	Total valuation all nonexempt property	V	" " "	"	15.3	16.8	18.2	24.6	25.5	26.8	32.9	185.5	213.2	234.5	264.7	278.3	330.0	357.8
21.	Proportion residential to total valuation	V_r/V	Line 18 ÷ Line 20	%	40	40	40	42	42	45	45	47	55	55	60	68	64	64
22.	Total assessed valuation per pupil	V/N	Line 20 ÷ Line 1	$000	3.9	3.6	3.3	4.0	3.6	3.4	3.1	13.8	12.6	11.6	11.5	10.6	10.5	9.4
Federal-connected res. vs total res. valuation																		
23.	% 3(b) to total non-3(a) pupils	$N_3(b)/N-N_3(a)$	Line 15/Line 1-Line 14	%	8	19	23	24	28	33	42	44	45	43	45	45	43	44
24.	% fed.-conn. res. val. to total val.	V_f/V	Line 21 × Line 23	%	3.2	7.6	9.2	10	12	15	19	21	25	24	27	31	28	28
Calculation of L_f & L_n																		
25.	Total local rev. for school S. & M.	L	Brevard Tax Ass'r.	$000	257	286	305	413	510	536	638	1,298	1,492	1,900	2,514	3,200	4,125	4,833
26.	Local school rev. from residences ($V_r/V \times L$)	L_r	Line 21 × Line 25	$000	103	114	122	173	214	242	287	610	822	1,040	1,510	2,180	2,640	3,090
27.	Local school rev. from fed.-conn. residences ($V_f/V \times L$)	L_f	Line 24 × Line 25	$000	8.2	21.7	28.0	41.3	61.2	80.5	121	272	373	455	679	992	1,160	1,350
28.	Nonfed-conn. local school rev. ($L - L_f$)	L_n	Line 25 - Line 27	$000	249	264	277	372	449	456	517	1,026	1,119	1,445	1,835	2,208	2,965	3,483
29.	Total local rev. per pupil	L/N	Line 25 ÷ Line 1	$	66	61	55	68	72	67	60	96	88	94	109	122	132	127
30.	Local rev. per nonfed. pupil	L_n/N_n	Line 28 ÷ Line 12	$	70.80	72.00	68.80	86.30	93.80	86.00	84.50	137.00	122.30	129.10	150.20	158.00	176.10	171.90
Calculation of F_e																		
31.	Calculation first term of equation	$L_n/N_n \times N_f$	Line 30 × Line 13	$000	28	74	106	153	216	232	383	820	957	1,169	1,623	1,932	2,557	3,032
32.	$F_e = L_n/N_n \times N_f - L_f$	F_e	Line 31 - Line 27	$000	20	52	78	112	155	152	262	548	584	714	944	940	1,397	1,682
Section 4 adjustment of F																		
Section 4 payments																		
33.	Section 4N	N_4	U.S. Off. Ed.	Pupils	0	0	0	0	547	402	?	0	1,834	1,234	1,704	1,482	2,287	3,110
34.	Section 4 contribution rate	LCR_4	" " "	$	0	0	0	0	96.71	166.55	?	0	156.26	223.61	261.81	291.33	298.78	322.59
35.	Section 4 funds received	$F_{e(4)}$	" " "	$000	0	0	0	0	53	67	20	0	287	276	446	432	683	1,003
Section 3 payments																		
36.	Section 3 contribution rate	LCR_3	" " "	$	58.99	64.13	59.01	97.20	100.78	111.75	145.20	151.45	151.45	163.23	169.79	179.75	188.78	199.95
37.	1/2 Florida average C/N		State Sch. Supt.	$	89.91	97.20	100.78	108.67	113.10	121.34	123.60	145.89	147.08	149.89	154.70	164.72	171.12	186.06
38.	1/2 U.S. average C/N (for 874 purposes)			$						151.45	151.45	163.23	169.79	179.75	188.78	199.95		
39.	Section 3 funds received	F_3	U.S. Off. Ed.	$000	33	38	54	126	97	152	329	454	464	668	825	1,035	1,144	1,546
40.	$LCR_4 - LCR_3$		Line 34 - Line 36	$	--	--	--	--	-4.07	54.80	?	--	4.81	60.38	92.02	111.58	110.00	122.64
41.	Excess: Sect. 4 Entitl. over ($N_4 \times LCR_3$)	$N_4(LCR_4-LCR_3)$	Line 33 × Line 40	$000	0	0	0	0	-2	22	?	0	9	74	157	166	252	382
42.	Total actual 874 funds received	$F_{(unadj.)}$	U.S. Off. Ed.	$000	33	38	54	126	150	218	350	454	750	944	1,271	1,467	1,827	2,549
43.	874 funds if N_4 paid at LCR_3	F	Line 42 - Line 41	$000	33	38	54	126	153	196	350	454	741	869	1,114	1,301	1,575	2,167
Comparison of F_e with F																		
44.	Equalization surplus (deficit) re 874 funds	$F - F_e$	Line 43 - Line 32	$000	13	(14)	(24)	14	(2)	44	88	(94)	157	155	170	361	178	485
P.L. 815 analysis data																		
45.	Total expends. bond construc. funds	CC_t	State Sch. Supt.	$000	0	0	61	1,237	474	1,288	973	2,667	3,130	4,857	1,820	2,216	4,828	8,160
46.	P.L. 815 receipts	P	" " "	$000	0	0	124	405	168	366	408	1,243	1,457	795	492	516	1,050	417
47.	Proportion 815 funds to CC_t	P/CC_t	Line 46 ÷ Line 45	%	0	0	204	33	36	28	42	47	46	16	27	23	22	5
48.	Total outstand. indebt.--co. & dist.	I	State Sch. Supt.	$000	436	400	385	1,179	1,596	2,386	3,092	3,345	8,081	8,290	8,552	11,168	22,986	22,574
49.	Indebtedness per pupil	I/N	Line 48 ÷ Line 1	$	115	87	66	194	226	298	290	248	476	409	371	425	734	595

Source: Stanford Research Institute, based on data sources given above (Col. 4).

A STUDY OF
THE OPERATION OF PUBLIC LAWS 874 AND 815
IN MONTGOMERY COUNTY, MARYLAND

By: Keith E. Duke

I INTRODUCTION

Reasons for Selection of Montgomery County

Montgomery County, Maryland, was selected as an area for case study for a number of reasons: (1) location within the Washington, D.C., metropolitan area; (2) rapid yet sustained growth over the period of the P.L. 874 and P.L. 815 programs; (3) large number and percentage of pupils qualifying for P.L. 874 and P.L. 815 aid; (4) large number of federal facilities, including a substantial number of nonmilitary federal employers; (5) the fact that the county and school district are coterminous; (6) high income and suburban characteristics of the area; (7) large demands placed on public schools; and (8) large local effort to meet educational demands and expectations from the public school system. It was hoped that by studying the Montgomery County Public Schools that greater insight could be gained into the operation of the P.L. 874 and 815 programs in suburban Washington and in other areas with social, economic, and educational characteristics similar to those of Montgomery County. Conclusions of more general applicability might also be reached on the basis of this case study.

Characteristics of Montgomery County

Montgomery County is one of the principal residential areas in suburban Maryland adjacent to the District of Columbia. During the past 15 years (1950-65), its population has increased nearly 150% to approximately 405,000. Over the same period, the number of pupils enrolled in the public schools (grades K-12) has increased at a substantially more rapid rate and, at present, over one-fourth of the entire population is enrolled in the public schools. (See Table M1.)

Montgomery County Public Schools first qualified for assistance under P.L. 874 in FY 1951-52. During that year and the following year, between 7 and 8% of those in average daily attendance (ADA) were pupils whose parents either lived or worked on federal properties within the county. Since the 1953 amendments that allowed pupils whose parents work outside the state--though within a reasonable commuting distance--to qualify for P.L. 874 entitlement, between 33 and 37% of the ADA have been federally

Table M1

POPULATION AND PUBLIC SCHOOL ENROLLMENT (K-12)
MONTGOMERY COUNTY, MARYLAND
FY 1950-51 to FY 1964-65

Year	County Population	Public School Enrollment	Enrollment as % of County Population
1950-51	164,400	27,772	16.9%
1951-52	186,700	32,380	17.3
1952-53	202,800	37,494	18.5
1953-54	219,800	42,289	19.2
1954-55	239,800	47,261	19.7
1955-56	257,200	52,294	20.3
1956-57	275,300	57,316	20.8
1957-58	288,100	63,015	21.9
1958-59	300,300	68,056	22.7
1959-60	319,000	74,523	23.4
1960-61	340,928	80,557	23.6
1961-62	354,000	86,177	24.3
1962-63	371,000	92,258	24.9
1963-64	389,600	97,792	25.1
1964-65	405,500	102,020	25.2

Sources: Maryland-National Capital Park and Planning Commission.
Montgomery County Public Schools.

connected pupils.* Since FY 1953-54, there has been no marked change in the percentage of federally connected pupils, although the current percentage (34.1%) is slightly below the maximum reached in FY 1961-62 (36.4%). Over 95% of the pupils with federal connection are 3(b)2 students, i.e., those whose parents live in taxable residential units but work on federal properties. (See Table M2.)

The major federal facilities which employ parents of children in the Montgomery County public schools are listed in Tables M3 and M4. Nearly all those parents who work for the federal government within Montgomery County are employed in a few relatively large facilities, the most important of which is the National Institutes of Health at Bethesda. Outside the county, however, over 235 federal facilities employ parents of Montgomery County public school children. An important characteristic of most of the larger facilities as well as some of the smaller ones both within and outside the county is their technical nature. A substantial proportion of Montgomery County residents who work for the federal government are highly trained professional and technical people who are employed in comparatively well-paid jobs.

In addition to the federal workers, a large number of Montgomery County residents with nonfederal jobs are employed in professional and related services, and the percentages who are self-employed, permanently employed, and employed in white collar occupations are high relative to other parts of Maryland and the Washington SMSA. For these and related reasons, family income in Montgomery County is also high relative to other areas; in 1959, median family income was actually higher than any other county in the continental United States.† Selected population, income, employment, and housing statistics for Montgomery County, Washington, D.C., Maryland, and the United States are shown in Table M5. In most cases, Montgomery County is substantially different from the other areas shown, and generally far above average.

Table M5 also shows selected educational characteristics of the Montgomery County population, compared with those of Washington, D.C., and Maryland. From these data it will be noted that, on the average, adult Montgomery County residents have achieved a higher educational level, and

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* In FY 1963-64, 10.3% of the total ADA had parents who either lived or worked on federal properties within Montgomery County.

† Median family income was higher than Montgomery County only in the Juneau (Alaska) Election District, in 1959. See U.S. Bureau of the Census, Census of Population: 1960.

Table M2

AVERAGE DAILY ATTENDANCE, MONTGOMERY COUNTY
FY 1949-50 to 1963-64

Fiscal Year	Federally Entitled Students				Nonfederal Nontuition	Total (excluding tuition)	Tuition	Total
	3(a)	3(b)1	3(b)2	Total Section 3				
1949-50								22,374
1950-51								25,842
1951-52	179	237	1,793	2,209	27,951	30,160	178	30,338
1952-53	133	331	2,262	2,726	32,182	34,907	92	34,999
1953-54	212	126	12,797	13,135	26,248	39,383	189	39,572
1954-55	201	46	14,583	14,830	29,398	44,228	84	44,312
1955-56	204	46	15,903	16,153	32,643	48,796	23	48,819
1956-57	196	24	18,219	18,439	35,356	53,795	85	53,880
1957-58	180	19	19,781	19,980	37,983	57,963	46	58,009
1958-59	86	7	22,104	22,197	41,563	63,760	64	63,824
1959-60	66	1	25,074	25,141	45,094	70,235	40	70,275
1960-61	97		26,477	26,574	49,171	75,745	45	75,790
1961-62	141		28,425	28,566	51,951	80,517	71	80,588
1962-63	166		29,863	30,029	52,469	82,498	98	82,596
1963-64	170	1	29,366	29,537	57,092	86,629	151	86,780

Note: Kindergarten students counted as half students beginning FY 1963-64; data are generally final audited figures as approved by the U.S. Office of Education, but may not be in all cases.

Source: Montgomery County Public Schools.

Table M3

MAJOR FEDERAL FACILITIES IN MONTGOMERY COUNTY
FY 1963-64

Federal Facility	Pupils Residing on Facility
Walter Reed Army Medical Center Glen Haven Housing Site	113.5
Walter Reed Army Medical Center Forest Glen Annex	23.0
National Institutes of Health	22.5
National Naval Medical Center	12.5
Others	20.5
Total	192.0

	Pupils Whose Parents Are Employed on Facility
National Institutes of Health	3,304.0
National Naval Medical Center	1,187.0
Atomic Energy Commission	1,180.0
Naval Ordnance Laboratory	1,134.5
Johns Hopkins Applied Physics Laboratory	795.5
Army Map Service	808.5
David Taylor Model Basin	568.0
National Bureau of Standards	195.0
Walter Reed Army Medical Center Forest Glen Annex	109.0
Others	112.0
Total	9,393.5

Source: Montgomery County Public Schools, based on two-count method which accounts for the calculation of fractional students.

Table M4

MAJOR FEDERAL FACILITIES EMPLOYING MONTGOMERY COUNTY RESIDENTS OUTSIDE THE COUNTY

FY 1963-64

Federal Facility	Pupils Whose Parents Are Employed on Facility
The Pentagon	1,460.0
Walter Reed Army Medical Center	1,299.5
Department of State	1,295.0
Department of the Navy (Main Navy)	1,147.5
National Bureau of Standards	896.0
Fort George G. Meade	808.5
Department of Agriculture	719.0
Goddard Space Flight Center	671.0
Department of Commerce	665.0
Department of Health, Education, and Welfare	635.5
General Accounting Office	590.5
Naval Security Station	566.5
Langley Field	527.0
Veterans Administration	520.5
220 Others	11,912.5
Total	23,713.0

Source: Montgomery County Public Schools.

Table M5

SELECTED POPULATION, INCOME, EMPLOYMENT, HOUSING, AND EDUCATIONAL CHARACTERISTICS OF MONTGOMERY COUNTY, MARYLAND

1960

	Montgomery County	Washington D.C.	Washington SMSA	Maryland	United States
Population					
Percent increase 1950-60	107.4%	-4.8%	36.7%	32.3%	18.5%
Percent under 18 years	40.4%	28.7%	34.9%	36.6%	35.8%
Median age	28.1	32.2	28.9	28.7	29.5
Percent nonwhite	3.9%	54.8%	24.9%	17.0%	11.4%
Percent rural farm	1.3%	0	n.a.	3.6%	7.5%
Population per household	3.65	2.87	3.25	3.48	3.29
Income (1959)					
Median family income	$9,317	$5,993	$7,577	$6,309	$5,660
Percent under $3,000	3.2%	9.4%	5.6%	8.8%	21.4%
Percent $10,000+	44.6%	21.7%	30.5%	19.8%	15.1%
Employment (percent)					
Government workers	34.0%	37.0%	37.0%	18.7%	12.2%
Self-employed	9.1	5.1	6.0	8.6	12.2
Professional and related services	20.0	14.8	15.2	12.4	11.7
Public administration	22.9	26.9	26.9	10.8	5.0
Manufacturing	8.4	6.2	7.5	24.5	27.1
White collar occupations	69.9	50.0	58.8	45.9	41.1
Worked 50 weeks or more (1959)	68.8	66.2	67.5	61.1	56.8
Civilian labor force unemployed	1.3	4.1	2.8	4.8	5.1

Table M5 (concluded)

	Montgomery County	Washington D.C.	Washington SMSA	Maryland	United States
Housing					
Percent of occupied housing units occupied by owners	70.8%	28.3%	46.3%	64.5%	61.9%
Median value of owner-occupied housing	$19,800	$15,400	$17,100	$11,900	$11,900
Median gross rent of renter-occupied housing	$107	$81	$88	$78	$71
Education					
Median school years completed by persons 25 years or older	12.8	11.7	12.3	10.4	10.6
Percent children, age 14-17 years in school	93.9%	84.8%	89.5%	85.3%	87.4%
Percent elementary school children in public schools	78.6%	85.8%	81.6%	81.8%	85.6%

Source: U.S. Bureau of the Census, Censuses of Population and Housing: 1960.

a higher percentage of children are in school; a larger percentage of children are also enrolled in private schools than in Washington or Maryland. Other data indicate that a larger percentage of pupils graduate from high schools and pursue higher education than in other Maryland counties. With a relatively young population, a greater than average household size, and higher than average educational attainments, it is not surprising that Montgomery County residents also have high expectations, and place greater than average demands on their public schools.

Trends in P.L. 874 Entitlement and Local Financial Efforts

The sources of operating funds of the Montgomery County Public Schools from FY 1949-50 to FY 1963-64 are given in Table M6. During this period, local funds have represented at least two-thirds of total operating funds, and over the past decade have averaged about 70% of the total. The Montgomery County Public Schools first received funds under the P.L. 874 program in FY 1951-52; during the past decade, P.L. 874 entitlements have represented approximately 7.2% of current operating funds. State aid, other federal programs (vocational education, NDEA, and MDTA), and miscellaneous sources provided the remainder.

Essentially all the funds received under P.L. 874 are for students whose parents work on, but do not live on, federal properties, i.e., 3(b)2 pupils. Funds received for 3(a) and 3(b)1 pupils are negligible, representing less than 2% of the P.L. 874 entitlement. (Table M7.)

Chart M1 shows several indexes of local effort relative to the average for other school districts in Maryland: (1) local revenues per average daily membership (ADM),* (2) assessed valuation per ADM, (3) current cost of education per ADM, and (4) local school tax rate per assessed valuation. The chart also shows state aid funds received by Montgomery County relative to other districts in Maryland. All indexes are high relative to the state, except the amount of state aid received. Most indexes showed a slightly downward trend from FY 1949-50 to FY 1957-58; since 1957-58, most indexes of local effort have trended upward, some of them sharply so. Although the tax rate in Montgomery County has declined relative to other districts in the state since FY 1959-60, local

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* Average daily membership (ADM) is used in these indexes rather than average daily attendance (ADA) since data published by the State Board of Education are based on the former.

Table M6

CURRENT OPERATING FUNDS, BY SOURCE*
MONTGOMERY COUNTY
FY 1949-50 to FY 1963-64

Year	Local (county)	State (state aid)	P.L. 874	Other Federal	Miscellaneous[†]	Total
1949-50	$ 3,743,401	$ 1,087,703	$ --	$ 34,927	$ 4,808	$ 4,870,839
1950-51	4,324,188	1,402,380	--	26,915	2,434	5,755,917
1951-52	5,499,574	1,729,778	89,300	33,523	1,832	7,354,007
1952-53	6,537,299	1,895,700	184,905	5,283	3,602	8,626,789
1953-54	8,040,778	1,542,985	254,579	15,531	14,233	9,868,106
1954-55	9,152,014	2,077,150	747,523	28,244	32,762	12,037,693
1955-56	10,001,038	3,155,420	946,948	46,430	27,035	14,176,871
1956-57	11,907,804	3,544,092	1,414,293	42,622	50,257	16,959,068
1957-58	13,466,573	4,153,810	1,525,787	32,067	29,601	19,207,838
1958-59	16,568,829	6,348,634	1,741,045	35,317	38,714	24,732,539
1959-60	20,320,849	7,525,048	2,066,883	60,521	36,735	30,010,036
1960-61	23,362,117	8,531,079	2,467,415	334,995	69,617	34,765,223
1961-62	25,453,796	9,431,899	2,879,894	151,326	77,543	37,994,458
1962-63	32,478,173	10,095,398	3,267,307	197,459	102,535	46,140,872
1963-64	34,749,912	10,121,267	3,531,025	319,707	103,423	48,825,334

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* Excludes funds from Montgomery Junior College, adult education, school lunch program, tuition of nonresident students, summer school, transportation on field trips, and use of school buildings.

[†] Includes revenue derived from evening high school attendants, program at the National Institutes of Health, sale of used and damaged property, replacement of lost textbooks, research grants, and other miscellaneous sources.

Source: Montgomery County Public Schools, Annual Financial Reports.

Table M7

P.L. 874 ENTITLEMENTS BY TYPE OF STUDENT, MONTGOMERY COUNTY FY 1960-61 to FY 1963-64

Type of Student	FY 1960-61	FY 1961-62	FY 1962-63	FY 1963-64
3(a)	$ 17,950	$ 28,310	$ 35,950	$ 40,444
3(b)1	--	--	--	119
3(b)2	2,449,784	2,853,585	3,233,715	3,493,233
Subtotal	$2,467,734	$2,881,895	$3,269,665	$3,533,796
Less 3(e) receipts*	319	2,001	2,358	2,771
Net entitlement	$2,467,415	$2,879,894	$3,267,307	$3,531,025

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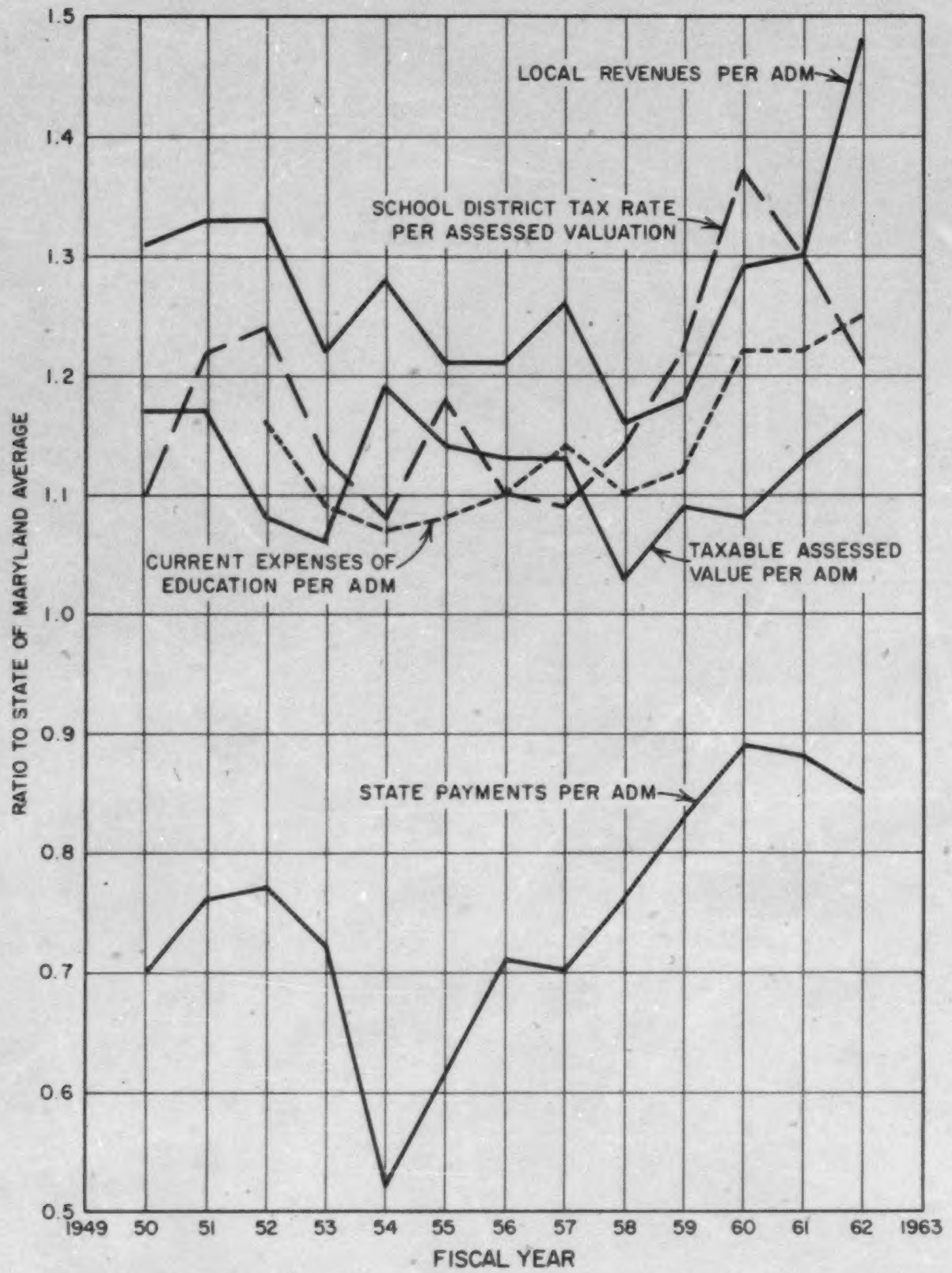
* Receipts from federal government for one of Johns Hopkins Applied Physics Laboratory buildings, deducted from gross entitlement.

Sources: U.S. Office of Education. Montgomery County Public Schools.

CHART M1

INDEXES OF LOCAL EFFORT
MONTGOMERY COUNTY TO MARYLAND AVERAGE
FY 1949-50 TO 1961-62



SOURCE: Stanford Research Institute from Annual Reports, State Board of Education of Maryland.

tax revenues were nearly 50% higher than the state average for FY 1961-62, the latest year available. From these comparisons, it seems clear that the receipt of P.L. 874 funds has not significantly diminished local fiscal effort in Montgomery County; to the contrary, local effort has remained at a high level relative to the state.

II COSTS AND SOURCES OF REVENUES FOR EDUCATING FEDERALLY CONNECTED PUPILS IN MONTGOMERY COUNTY

Determination of Cost-Revenue Differences for Federal and Nonfederal Pupils

As explained in Volume I, the following equation was developed and used in helping to determine if P.L. 874 payments meet the cost of educating federally connected pupils:

$$F_e = L_n \left(\frac{N_f}{N_n} \right) - L_f + A$$

where

F_e = the federal payment required to create an equal rate of revenue for each child, federal and nonfederal

L_f = local share of current expenses paid by property taxes of federally connected families

L_n = local share of current expenses paid by other property taxes

N_f = number of federally connected pupils in average daily attendance for the school year

N_n = number of nonfederal pupils in average daily attendance for the school year

A = additional costs entailed in qualifying for P.L. 874 entitlement and in educating federally connected students

In the above equation, F_e should equal the amount of P.L. 874 funds received in that year if revenues are the same for federal and nonfederal pupils; any difference between the calculated F_e and actual P.L. 874 payments, then, represents the calculated "overpayment" or "underpayment" received by the school district. The accounting for state aid funds is not necessary in the equation since Maryland makes no distinction between federal and nonfederal pupils and does not offset P.L. 874 or other federal payments to schools.

Before the equation can be used to solve for F_e, the values of the other terms must first be determined. The values of N_f and N_n (the number of federal and nonfederal pupils in average daily attendance in the public schools of Montgomery County) are most easily determined from existing data; these data are compiled by school personnel each year from student surveys. There is no question that 3(a) and 3(b)1 students whose parents live on federal properties provide no financial support to the schools from residential property taxes, and that 3(a) students whose parents also work on federal properties provide no support from industrial and commerical property taxes. Most of the 3(b)2 students, whose parents live in civilian housing but work on federal properties, also provide no support from commercial and industrial taxes; but, in Montgomery County, some 9.4% of the 3(b)2 students qualify for P.L. 874 entitlement because only their mothers work on federal property. About half of these students--an estimated 5% of the 3(b)2 pupils--have fathers working in nonfederal jobs whose work places are taxed for public school support. For this reason, it is necessary to adjust the number of federal and nonfederal students from available school data for FY 1962-63 as follows:

Students	Reported ADA	Adjustment	Calculated ADA
N_f	30,029	-1,493	28,536
N_n	52,469	+1,493	53,962

The determination of the values of L_f and L_n is much more difficult to accomplish. In the FY 1962-63, the total amount of funds received from local property tax sources ($L_f + L_n$) was $32,478,173 (see Table M6); calculated expenditures from these sources were $31,885,981. The assessed values of properties which constituted the local tax base for these sums are shown in Table M8. From data shown in this table, it is evident that nearly 72% of local tax revenues received by Montgomery County Public Schools come from residential properties; even so, the value of residential land and improvements is understated because many commercial and other zones have residences scattered within them. Moreover, it is extremely difficult to determine the amount of residential tax revenue received by the public schools from those persons who work on federal properties but whose residences are taxed, since employment information is not collected by the Montgomery County Tax Assessor.

In the absence of more precise determinations, the values of L_f and L_n used in the cost-revenue equalization equation were estimated on the basis of the following calculations and assumptions: (1) that the average

Table M8

ASSESSED VALUATION OF TAXABLE PROPERTIES IN MONTGOMERY COUNTY
FY 1962-63

	Assessed Value	Percent of Total
Real Property		
Residential	$ 972,693,830	
Duplex	7,047,870	
Apartments	111,117,800	
Subtotal Residential Properties	$1,090,859,500	71.9%
Commercial	131,683,060	
Industrial	27,464,560	
Special exception	10,530,585	
Nonconforming	2,616,980	
Railroad	513,390	
Farm	19,173,300	
Subtotal Nonresidential Properties	$ 191,981,875	12.6
Business Personal Property		
Property of individuals	$ 13,868,400	
Property of corporations	68,955,540	
Subtotal Business Personal Property	$ 82,823,940	5.5
Public Utilities		
Operating property	$ 151,882,245	
Domestic shares	583,850	
Subtotal Public Utilities	$ 152,466,095	10.0
Total	$1,518,131,410	100.0%

Source: Division of Assessments, Montgomery County.

assessed valuation of residential properties was 3.5% higher for federally connected families than for nonfederally connected families with children in the public schools;* (2) that the average number of children in average daily attendance in the Montgomery Public Schools was the same for federal and nonfederal families;† (3) that the total assessed value of residential units in nonresidential zones was $4,225,137;‡ (4) that none of the assessed valuation of farm properties was associated with those who worked on federal properties;§ (5) that the revenue received by the public schools was in direct proportion to assessed valuation.** The calculations of L_f and L_n were then made as follows:

$$L_f = \left(\frac{N_f - N_{3a}}{N - N_{3a}}\right) \left(\frac{V_r + V_{rc}}{V}\right) \left(\frac{R_f}{R_n}\right)\left(L - F_{3e}\right) + F_{3e}$$

$$L_n = L - L_f$$

---

* This figure was calculated by developing an average value for the housing units in each census tract (from 1960 census data) and then distributing federal and nonfederal pupils by census tracts that contained the schools they attended. The result was an average housing unit value of $21,075 for federal pupils and $20,355 for nonfederal pupils, a difference of 3.5%. These calculations are admittedly rough estimates; the necessary procedure to determine differences in housing value more accurately is set forth in Appendix A-1.

† This assumption could not be tested within the time constraints of this project. Underlying this assumption are several others: (1) that federal and nonfederal families have a proportionate number of their children in private schools; (2) that the average family size is the same for federal and nonfederal families; (3) that the age structure of the child population is the same; and (4) that single individuals and families without children are proportionate to the number of persons employed in federal and nonfederal jobs. See also Appendix A-1.

‡ This was based on the assumption that residential properties constitute 3% of the assessed valuation in commercial zones and 1% of the assessed valuation in industrial zones.

§ This assumption probably understates the value of properties owned by persons with federal jobs.

** This assumption ignores the question of delinquent taxes, tax payments for prior years, and possible differences in delinquency rates on different types of properties.

where

N = total ADA (82,498)

N_{3a} = number of 3(a) pupils in ADA (166)

V_r = assessed valuation of residential zones ($1,090,859,500)

V_{rc} = assessed valuation of residential properties in commercial and industrial zones ($4,225,137)

V = total assessed valuation for school tax purposes ($1,518,131,410)

R_f = average value of residential properties of families with federal jobs ($21,075)

R_n = average value of residential properties of nonfederal families ($20,355)

L = expenditures from local sources ($31,885,981)

F_{3e} = revenue (and expenditures) from federal properties under Section 3(e) of P.L. 874 ($2,358)

thus

$$L_f = (0.3446)(0.7213)(1.0354)(\$31{,}883{,}623) + \$2{,}358$$

$$= \$8{,}205{,}537 + \$2{,}358$$

$$= \$8{,}207{,}895$$

$$L_n = \$31{,}885{,}981 - \$8{,}207{,}895$$

$$= \$23{,}678{,}086$$

In calculating the value of A, it was found that the cost of educating federally connected pupils was slightly higher than the cost of educating nonfederal pupils for two reasons: (1) a greater percentage of federally connected students are in high school where costs are higher, and a smaller percentage are in kingergarten where costs are lower; and (2) administrative costs to the public schools are associated with the P.L. 874 program. Another potential source of additional costs for federally connected students is a possible need by these students for more costly educational programs (vocational education, counseling, etc.); however, no differential needs or costs were found in this area.

Chart M2 shows trends in enrollment, by grade level (kindergarten, grades 1-6, grades 7-12) in Montgomery County for recent years; Table M9 shows the percentage distribution of federal and nonfederal pupils in average daily attendance, by grade level, for FY 1961-62. On the basis of these figures, it was calculated that, in that year, the cost of educating federal pupils was $7.42 per student more than the cost of educating nonfederal pupils, or $4.71 more than the average for all pupils. Similar data could not be obtained for FY 1962-63, but on the basis of past trends, current enrollments, and increased costs, it was estimated that for FY 1962-63, the cost of educating nonfederal pupils, because of their differing grade distribution, was $7.88 per pupil more than that of nonfederal pupils--or a total of $223,619. Administrative costs of conducting two student surveys to establish federal connection, processing the data, and other related costs were estimated to be approximately 2.9% of entitled funds--or $94,752. The sum of these two cost figures gives a value for A of $318,371 for FY 1962-63.

Using the values obtained for N_f, N_n, L_f, L_n, and A, the value for F_e for the year 1962-63 was calculated as follows:

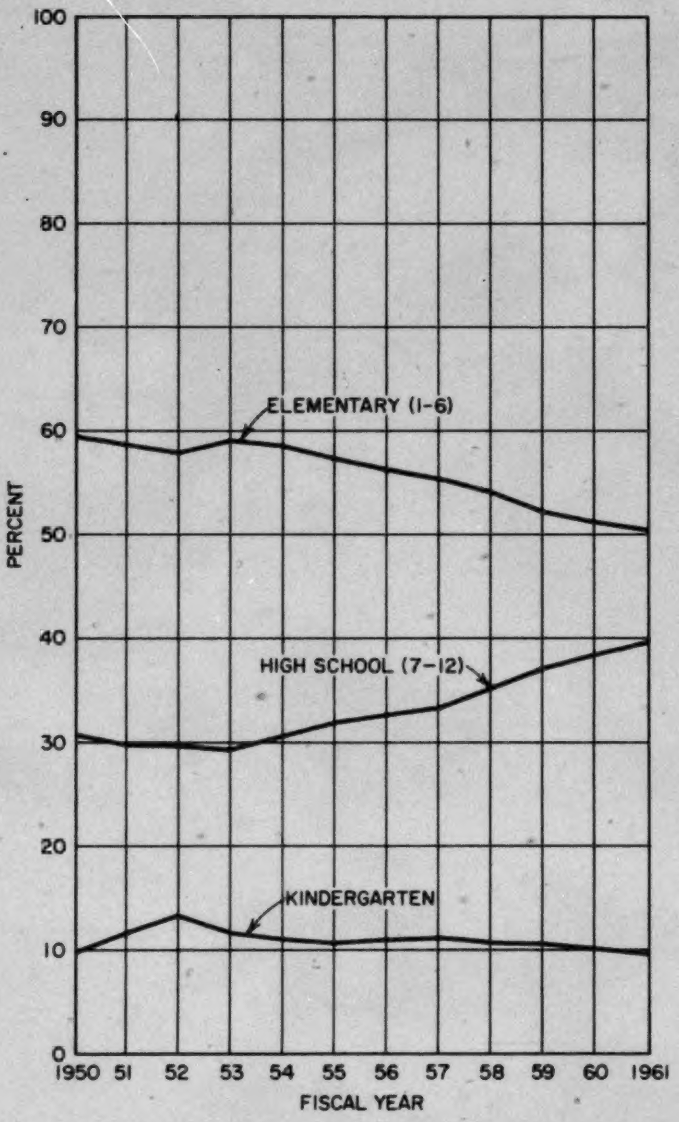
$$
\begin{aligned}
F_e &= L_n \left(\frac{N_f}{N_n}\right) - L_f + A \\
&= \$23{,}678{,}086 \left(\frac{28{,}536}{53{,}962}\right) - \$8{,}207{,}895 + \$318{,}371 \\
&= \$23{,}678{,}086\ (0.5288) - \$7{,}889{,}524 \\
&= \$12{,}520{,}972 - \$7{,}889{,}524 \\
&= \$4{,}631{,}448
\end{aligned}
$$

The amount of P.L. 874 funds received in FY 1962-63 was $3,267,307. The calculated underpayment was, therefore, $1,364,141.

In FY 1962-63, the local contribution rate of nonfederal students (L_n/N_n) was $438.79; the local contribution rate computed for all students (L/N) was $386.51; the local contribution rate of federal students, exclusive of P.L. 874 payments (L_f/N_f) was $287.63. The group rate upon which P.L. 874 entitlements were based in that year was $216.57.

CHART M2

PERCENT ENROLLMENT IN KINDERGARTEN, GRADES 1-6 AND GRADES 7-12
MONTGOMERY COUNTY
FY 1949-50 TO FY 1960-61



SOURCE : Annual Reports, Board of Education of Maryland.

NOTE : Enrollments at End of School Year 1950; Beginning of School Year 1951-61.

Table M9

PERCENTAGE DISTRIBUTION AND COST PER ADA, FEDERAL AND NONFEDERAL PUPILS, MONTGOMERY COUNTY FY 1961-62

	Average Daily Attendance			
Grade Level	Federal	Nonfederal	Total	Cost/ADA
Kindergarten	8.5%	10.1%	9.5%	$307.37
Grades 1-6	48.9	52.2	51.0	465.89
Grades 7-12	42.6	37.7	39.5	562.56
Total	100.0%	100.0%	100.0%	488.96

Source: Montgomery County Public Schools.

Reasons That P.L. 874 Entitlements Differ from Calculated Cost-Expenditure Differential

There are many reasons why the calculated cost-expenditure differential (F_e) differs from P.L. 874 receipts in Montgomery County. Principally, they are as follows: (1) use of the second preceding year in calculating local contribution rates; (2) use of a group rate which includes all Maryland counties rather than only those counties with reasonably comparable local contribution rates; (3) calculation of local contribution (LCR) rate that includes federal ADA and assumes that all revenues from nonlocal sources are expended in the fiscal year in which they are received; (4) qualification for entitlement of students whose mothers work on federal properties but whose fathers (primary earners) work on taxable properties; (5) existence in Montgomery County of a residential-industrial ratio that is different from that assumed in P.L. 874; (6) differences in residential assessed value per household for federal and nonfederal families; and (7) not accounting for additional costs to entitled school districts of qualifying for P.L. 874 funds and of educating federally connected pupils. Items, 1, 2, 3, and 7 tend toward undercompensating for the costs associated with educating federally connected children; items 4, 5, and 6 tend toward overcompensating for these costs. In Montgomery County, the former outweigh the latter by a considerable margin. The effects of each will be examined, briefly, in the following paragraphs.

Use of the Second Preceding Year in Calculating Local Contribution Rates

The use of an LCR calculated on data from the second preceding year results in P.L. 874 entitlements per pupil that are not equal to current costs. This is true primarily because the increasing costs of education necessitate larger local contributions each year. The group rate for Maryland counties (which is the basis for P.L. 874 payments to Montgomery County), for example, has been increasing at the rate of 7.5% per year over the past ten years (FY 1953-54 to FY 1963-64), and the FY 1964-65 group rate (developed from FY 1962-63 data) was 17.6% higher than the FY 1962-63 group rate (developed from FY 1960-61 data) (Table M10). Thus, if the current rate had been used rather than the rate for the second preceding year, Montgomery County would have received an additional $575,668.

Calculated payments based on current rate ($254.70)	$3,845,333*
Actual payments based on second preceding year rate ($216.57)	3,269,665*
Difference	$ 575,668

Use of Group Rate in Determining P.L. 874 Entitlements

As has been discussed in Volume I, each state has the option of using comparable districts or group rates in determining P.L. 874 entitlements. In Maryland, the group rate procedure has been employed since FY 1951-52. Baltimore City alone constitutes one group and the 23 Maryland counties, each with its own school district, constitute the second group. Group rates are determined for all elgible districts (since Baltimore City does not qualify for P.L. 874 funds) by totaling all local funds expended by county school districts throughout the state and dividing by their average daily attendance. The result of this procedure is that districts with low LCR's (relative to the group average) receive greater amounts from the P.L. 874 program, and districts with high local contribution rates receive lesser amounts than they would receive under the comparable school district alternative. Data for FY 1962-63 illustrate this point. (See Table M11.)

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* Less $2,358 in 3(e) receipts. (See Table M7.)

Table M10

RATE PER ENTITLED PUPIL AND PERCENT INCREASE OVER SECOND PRECEDING YEAR
MARYLAND COUNTIES
FY 1953-54 to FY 1964-65

Year	Group Rate per Entitled Pupil	Percent Increase from 2nd Preceding Year
1953-54	$115.32	n.a.
1954-55	123.55	n.a.
1955-56	130.29	13.0%
1956-57	145.20	17.5
1957-58	n.a.	n.a.
1958-59	161.15	11.0
1959-60	180.40	n.a.
1960-61	185.05	14.8
1961-62	200.78	11.3
1962-63	216.57	17.0
1963-64	237.91	18.5
1964-65	254.70	17.6

Sources: Montgomery County Public Schools. Stanford Research Institute.

The 1960-61 group rate--applicable to FY 1962-63--was $216.57 for county school districts in Maryland. The actual LCR's of Montgomery and Baltimore counties were nearly $100.00 above this average, while all other eligible county districts were below, some as much as $140.00. The result is that Montgomery County receives P.L. 874 funds based on a group rate that is 30% below its own LCR, while some counties receive 2-1/2 times as much by using the group rate as they would if payments were based on the rate of the most nearly comparable districts.

In considering the effects of using the group rate in Maryland, the effects of the 1953 amendment to P.L. 874 which established minimum LCR's should also be taken into account. Section 3(d) of the present law sets

Table M11

COMPARISON OF P.L. 874 PAYMENTS TO ELIGIBLE SCHOOL DISTRICTS IN MARYLAND BASED ON LOCAL CONTRIBUTION AND GROUP RATES, ACTUAL AND ASSUMED

FY 1962-1963

School District	Number of Equated Pupils*	Local Contribution Rate	P.L. 874 Payments if Based on Local Contribution Rate	P.L. 874 Payments (Actual) Based on Group Rate†	P.L. 874 Payments if Based on Assumed Multigroup Rates‡
Allegany	558.0	$140.25	$ 78,259	$ 120,846	$ 109,859
Anne Arundel	6,358.5	150.07	954,220	1,377,060	1,251,861
Baltimore	2,058.5	314.13	646,636	445,809	638,958
Calvert	317.0	81.46	25,822	68,652	62,411
Cecil	1,205.0	147.88	178,195	260,966	237,240
Charles	1,471.5	95.59	140,660	318,682	289,709
Frederick	1,180.0	211.56	249,640	255,552	232,318
Harford	3,993.0	151.54	605,099	864,764	786,142
Howard	566.5	176.59	100,038	122,686	111,533
Kent	47.5	158.01	3,752	5,143	4,676
Montgomery	15,097.5	306.52	4,626,175	3,269,665	4,686,264
Prince George's	14,504.0	183.14	2,656,262	3,141,131	2,855,548
St. Mary's	1,870.0	84.34	157,715	404,985	368,166
Washington	888.5	201.57	179,094	192,422	174,928
Maryland	50,115.5	$216.57§	$10,601,567	$10,848,363	$11,809,613

Note: All rates based on FY 1960-61; 3(e) receipts excluded. Kent County payments 50%.

* 3(a) students counted as full pupils, 3(b) students as half pupils.
† $216.57 per equated pupil.
‡ $310.40 for Baltimore and Montgomery counties; $196.88 for other eligible counties.
§ State-calculated group rate (excludes Baltimore City).

Sources: Maryland State Department of Education. Stanford Research Institute.

the minimum LCR for any local educational agency in any state at 50% of the average per pupil expenditure for that state, or 50% of the average per pupil expenditure for the United States, whichever is higher. Since the institution of this provision (a year or more after the group rate procedure was inaugurated in most states) it has been possible for state educational agencies to group districts with low LCR's together in such a way that their low rates would not lower the average of the higher rate districts; at the same time, no district would receive less than the stipulated minimum. In Maryland, this means that no district could have received less than $196.88 for FY 1962-63, yet if the grouping had been different, or if districts had been permitted the individually computed comparable district option, Montgomery and Baltimore counties would have received substantially greater P.L. 874 payments. For Montgomery County in FY 1962-63, this difference amounted to over $1.4 million.

Group Rate Used	Calculated P.L. 874 Payments
Calculated group rate, Montgomery and Baltimore counties ($310.40)	$4,686,264*
Actual group rate used for P.L. 874 payments, all Maryland counties ($216.57)	3,269,665*
Difference	$1,416,599

Calculation of Local Contribution Rate

In addition to the disparities between costs and P.L. 874 payments brought about by use of the second preceding year and a statewide group rate, the method of calculating LCR's in Maryland also tends toward undercompensation of Montgomery County. Two principal factors cause this disparity: (1) the inclusion of federal ADA and revenues derived from federal families in computing the LCR, and (2) the assumption that all nonlocal revenues are spent during the fiscal year in which they are received.

The difference between the LCR computation as set forth in P.L. 874 (L_t/N_t) and the LCR of nonfederal pupils (L_n/N_n) in the Montgomery County public schools for FY 1962-63 has been noted. For that year, the difference between the two was about 12% or $1,491,862. However, since P.L. 874 payments are based on the second preceding year and a statewide group rate which averages all Maryland counties, the disparity between L_t/N_t and L_n/N_n applicable to FY 1962-63 for Montgomery County was over $1 million less than this amount.

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* Less $2,358 in 3(e) receipts. (See Table M7.)

In calculating the LCR's of each county school district, which together serve to produce the applicable group rate, Maryland also uses a procedure that tends to produce a lower group rate for all counties and thus for Montgomery County. This procedure is based on the assumption that all funds from state and federal sources are expended in the same year that they are received, while any unexpended funds at the end of the fiscal year are considered to be local funds. In most states, expenditures from local sources are assumed to be in proportion to revenues from local sources, and this produces a higher expenditure rate from these sources and therefore a higher local contribution (or group) rate.

For all Maryland counties, revenue from local sources was 58.71% of total revenue in FY 1962-63. If 58.71% of expenditures by county school districts had been considered to be from local sources, the group rate would have been $1.60 higher.

These differences in calculating the LCR account for an estimated $468,888 of the difference between F_e and F calculated above.

Qualification of Pupils Because of Working Mother

P.L. 874 makes no distinction between primary and secondary earners who work on federal properties, and the children of both qualify for P.L. 874 payments to the Montgomery County Public Schools. The following tabulation shows the percentage of 3(b)2 pupils who qualified for P.L. 874 payments for FY 1963-64.

Parent Working on Federal Property	Percentage of 3(b)2 Pupils
Father only	84.7%
Both parents	5.9
Mother only	9.4
Primary worker	(4.4 est)
Secondary worker	(5.0 est)
Total	100.0%

The pupils whose mothers work for the federal government as secondary workers--estimated to be a little more than half the total whose mothers only are employed by the federal government or about 5% of all 3(b)2 pupils--are, in a sense, a bonus to the schools, since their fathers pay taxes to support the schools on both residential and work places; the students are, therefore, no different from nonfederal pupils. In FY 1962-63, the Montgomery County Public Schools received $161,670 (1,493 pupils times half the group rate of $216.57) for these pupils.

Assumption of Equal Residential and Industrial Tax Base

P.L. 874 pays an equal amount to the qualifying school district for each child one of whose parents either lives on or works on federal property; in each case it is half the total entitlement that a school district receives for a student, one of whose parents both lives and works on federal property. The assumptions inherent in the law, therefore, are: (1) that payments received for children whose parents live on federal property are equal to tax monies that the district would receive if the federal residential properties were tax assessable; (2) that payments received for children whose parents work on federal property are equal to tax monies that the district would receive if the federal industrial (work) properties were tax assessable; and (3) that the assessed value of work places and residential properties are the same.

In Montgomery County, residential properties represent approximately 72% of the total assessed valuation for school tax purposes (Table M8). Moreover, since (1) 95.5% of the federally connected students in the county live in taxable residential properties and qualify because their parents work on federal properties which are not taxable for school purposes (3(b)2 pupils), and (2) since federally connected pupils constitute about one-third of all those in average daily attendance, the revenue derived by the school district from the properties in which federal students live is considerably more than that assumed under P.L. 874. A more equitable procedure would be to apply different rates of payment for 3(b)1 and 3(b)2 pupils based on the ratio of nonfederal residential valuation to total valuation of taxable properties:

$$R_{3b1} = \frac{\left(\frac{V_r + V_{rc}}{V}\right)\left(1 - \frac{N_f - N_{3a}}{N - N_{3a}}\right)}{1 - \left(\frac{V_r + V_{rc}}{V}\right)\left(\frac{N_f - N_{3a}}{N - N_{3a}}\right)}$$

$= 0.7213\ (1 - 0.3446)\ /\ 1 - (0.7213)(0.3446)$

$= 0.4727\ /\ 0.7514$

$= 0.6291$

$R_{3b2} = 1 - R_{3b1}$

$= 1 - 0.6291$

$= 0.3709$

where

R_{3b1} = percentage of the rate paid 3(a) students which would compensate for deprived revenues on residential properties

R_{3b2} = percentage of the rate paid 3(a) students which would compensate for deprived revenues on work places (industrial and commercial properties)

The difference in entitlement when using the 50:50 ratio assumed under P.L. 874 and when using the more equitable ratio of 63:37 is shown in Table M12. In FY 1962-63, Montgomery County received $834,820 because its residential-industrial tax base was so decidedly different from that assumed under P.L. 874.

Difference in Assessed Value per Household and Other Differences Between Federal and Nonfederal Families

A study of the distribution of students in Montgomery County indicates that there are differences between the assessed (and market) value of the residential properties owned by federal and nonfederal families and, thus, differences in their contribution to the support of the public schools through residential property taxes. The estimated differential of 3.5% between federal and nonfederal families for FY 1962-63 results in a sum of $418,895 in school district revenue above that assumed if the differential did not exist.

Table M12

COMPARISON OF P.L. 874 PAYMENTS BASED
ON ASSUMED AND ACTUAL RESIDENTIAL-INDUSTRIAL RATIO
MONTGOMERY COUNTY, MARYLAND
FY 1962-1963

Type of Student	ADA	Assumed Ratio	Actual Ratio	P.L. 874 Rate Based on Assumed Ratio	P.L. 874 Rate Based on Actual Ratio	P.L. 874 Payments Under Assumed Ratio	P.L. 874 Payments if Based on Actual Ratio	Difference in P.L. 874 Payments
3(a)	166	100.0	100.0	$216.57	$216.57	$ 35,950	$ 35,950	$ 0
3(b)1	--	50.0	62.91	108.285	136.24	--	--	--
3(b)2	29,863	50.0	37.09	108.285	80.33	3,233,715	2,398,895	+834,820
Total Section 3	30,029					$3,269,665	$2,434,845	+$834,820

Source: Montgomery County Public Schools. Stanford Research Institute.

Differences between federal and nonfederal families as to numbers of children per household and other factors might also affect the calculated F_e. However, at present, insufficient data exist upon which calculations may be based.

Additional Costs Associated with Federally Connected Pupils

P.L. 874 does not take into account administrative costs to the schools in qualifying for entitlement; nor does it consider additional costs associated with providing education for federally connected students. As noted earlier (Table M9), a disproportionate percentage of federally connected students are in the upper grades (7-12) where costs are higher, and the burden of surveying the total enrollment twice yearly, together with other costs incident to qualification, added an estimated $318,371 to school expenditures during FY 1962-63. This sum (A) was subtracted from the local contribution of federal pupils in computing the value of F_e in the equalized cost-revenue equation.

Relative Importance of Several Factors Considered

The relative importance of the various factors responsible for the difference between the calculated amount required to create an equal amount of revenue for each federal and nonfederal pupil (F_e) and the actual P.L. 874 entitlement (F) in FY 1962-63 in Montgomery County are shown in Table M13. The interdependence of several of the variables should be noted: for example, adjustments in ADA because of the qualification of pupils with secondary working mothers affect several of the other factors. Many of the calculations have also been made on the basis of partially estimated data or information for other fiscal years. Even so, the amounts listed in Table M13 are believed to be indicative of the relative importance of the various factors responsible for the calculated differential between F_e and F.

The largest source of undercompensation of the costs of educating federally connected students in Montgomery County is the use of the group rate, whereby Montgomery County's high LCR is averaged with other counties, all but one of which have considerably lower LCR's. This procedure would tend to have the same effect in other school districts whose local contribution to the support of their schools is high relative to the control group to which they are compared. The justification for its use in states like Maryland is equalization of aid among districts on the basis of calculated need rather than on an equalization of revenues and expenditures for federal and nonfederal pupils within any given district. The

Table M13

RELATIVE IMPORTANCE OF FACTORS RESPONSIBLE FOR DIFFERENTIAL BETWEEN F_e AND F
MONTGOMERY COUNTY, FY 1962-63
(Dollars in Thousands)

Sources of Undercompensation	Amount
Use of second preceding year	$ 576
Use of group rate	1,417
Calculation of local contribution rate	469
Uncompensated costs of qualifying and educating federal students	318
Subtotal	$2,780
Sources of Overcompensation	
Qualification of pupils because of secondary workers	$ 162
Differences between actual and assumed residential-industrial ratio	835
Differences in residential property values between federal and nonfederal families	419
Subtotal	$1,416
Difference (F_e - F)	$1,364

Source: Stanford Research Institute.

use of the second preceding year in calculating local contribution rates and calculation of a local rate, which includes differing rates for federal and nonfederal students, also result in substantial undercompensation to Montgomery County.

The largest source of overcompensation in Montgomery County is the substantial difference between the assessed valuation of residential and industrial properties within the county. Since nearly all the federally connected students in the county are 3(b)2 students, payments made for these students at half the 3(a) rate greatly overcompensates for tax revenues from industrial properties. A similar situation would exist in other districts where residential valuation substantially exceeded industrial valuation. Similarly, because the value of the average residence owned by a federal family exceeds the value of the average residence owned by a nonfederal family, substantial overcompensation results. The reverse would be true where the assessed value of nonfederal residences exceeded that of the residences of federal families.

Overall, for the fiscal year studied, the sources of undercompensation outweighed the sources of overcompensation in Montgomery County so that P.L. 874 payments did not equal local costs associated with federal pupils. The various sources of over- and undercompensation would have been approximately equal, however, if Montgomery County had received P.L. entitlements based on an LCR more nearly equal to its own rate rather than on a statewide group rate of all Maryland counties.

Comparison of P.L. Entitlement and In-Lieu Taxes on Federal Properties

Many of the federal properties in Montgomery County are difficult to assess because of their unique nature. But, according to the latest information available from the assessor's office of Montgomery County, the assessed value of all federal real properties within the county (exclusive of the new Bureau of Standards facility which has not yet been completed) is $142,050,910. If the 1963-64 school tax rate for current expenditures of $2.10 per $100.00 assessed valuation had been applied to federal facilities within the county, it would have produced $2,983,069 in school revenue, or $547,956 less than the $3,531,025 that the schools received in P.L. 874 payments for that fiscal year. No estimate is available from the assessor's office or elsewhere of the value of business personal properties pertaining to the federal government within the county. However, applying the same ratio of business personal properties to real properties as exists for nonfederal properties in the county, gives an estimate of $62,658,650; a $2.10 tax on this amount would produce $1,315,832. Thus, taxing federal properties in the county at the full school tax rate would have produced about $740,000 more, or about 21% more, than the county received in P.L. 874 payments in FY 1963-64, but somewhat less than the calculated F_e necessary to compensate fully for the cost of educating federal pupils in the county public schools.

Because of the difficulties of accurately and fairly assessing federal properties on a continuing basis, and because such a large percentage of those persons with federal jobs who live in Montgomery County work on federal facilities outside the county, it would seem that the concept embodied in P.L. 874 of reimbursing school districts for the local costs of educating federally connected students would be more equitable than in-lieu tax payments, at least in Montgomery County.

III THE INFLUENCE OF FEDERAL CONNECTION ON MONTGOMERY COUNTY'S LOCAL EDUCATIONAL AND FISCAL EFFORT

The relationship between Montgomery County's local effort to support education and revenues received under the P.L. 874 program may be assessed in a number of ways: (1) by analysis of how P.L. 874 funds have been expended; (2) comparison of trends in local effort and numbers of federally connected pupils in the schools; (3) study of the budgetary process; and (4) assessment of the probable effects on the schools of withdrawing or significantly curtailing the P.L. 874 program.

Expenditures of P.L. 874 Funds

P.L. 874 funds, as they are received by the Montgomery County Public Schools, become a part of general operating funds and are not earmarked or expended for any specific purpose. Rather, they are used to meet the general obligations of the schools as they become due. As indicated in Table M6, P.L. 874 funds were only about 1% of revenues the first year they were received (FY 1951-52); except for the substantial increase that occurred in FY 1954-55 as a result of amendments to the basic act, P.L. 874 entitlements have increased at a relatively even rate, and notable expenditures that can be traced directly to the availability of federal monies are not evident. On the other hand, local school and county officials agree that P.L. 874 funds have been extremely important to the schools during the past 15 years in helping finance the increased cost of education, extending services, raising teachers' salaries, and generally making improvements in public education in Montgomery County.

In Montgomery County, federally connected students are not distinguished from other students within the school system. Thus, one cannot say that certain programs were made possible, or necessary, because of P.L. 874 revenues or federally connected enrollment. If the proportion of federally connected children to total enrollment had changed substantially, analysis of expenditures before and after the change might disclose specific channels into which P.L. 874 funds had been directed. However, this is not the case in Montgomery County. Finally, changes in the kinds of demands for educational services might have occurred as federally connected persons moved into the district, especially if they differed in socioeconomic status from other residents, but no evidence exists that Montgomery County residents employed on federal property differ markedly from other residents in their demands for educational services.

In addition to the program for public instruction in grades 1 through 12 required by Maryland law, Montgomery County offers kindergarten, adult education, and junior college. Baltimore City is the only other school district in Maryland offering kindergarten to all children. In terms of teachers' salaries, pupil-teacher ratios, expenditures per pupil, and other traditional indices of educational programs, Montgomery County is among the leaders in the state. The ratio of pupil enrollment to teaching staff decreased from 29.4 pupils per teacher in 1950 to 23.6 pupils per teacher in 1964.

The educational program in Montgomery County is a broad one. In addition to classroom teachers, professional personnel include resource teachers, teaching specialists, counselors, librarians, psychologists, supervisors, and administrators. Special programs for the academically gifted, vocational education, remedial reading, and new curricular offerings in mathematics, science, and foreign language are included in the school curriculum. These programs, together with high student ability levels and the attempt to develop a quality educational program throughout the schools, are reflected in high pupil achievement test scores, which frequently average at least one grade level above the national norm. Moreover, average scores on achievement tests have been continually improving during the past ten years. Thus, as expenditures per pupil increased, so have achievement test results, but causal relationships between pupil achievement and federal connection cannot be demonstrated, and there is no evidence that federally connected pupils differ from others with respect to academic ability or achievement. Similarly, an increasing percentage of Montgomery County high school graduates enroll in colleges and other forms of higher education. Between 1953 and 1963, the percentage rose from 54 to 67% and now considerably exceeds both state and national averages. However, since the federal proportion of students in average daily attendance remained relatively stable during this period, one cannot conclude that the federal connection influenced this trend.

Local Effort and Federally Connected Students in the Schools

Relative to the state average for all school districts in Maryland, the local fiscal effort in Montgomery County is high, and the index of local revenues per ADM has been consistently above the index of assessed valuation per ADM relative to the average of all Maryland school districts (see Chart M1).* Also, according to the latest available data from the Maryland State Fiscal Research Bureau, a considerably larger proportion of all local revenues raised in Montgomery County are used for school purposes than are used in the average of Maryland counties.

Chart M3 shows recent trends in revenues from local sources and P.L. 874 entitlement since FY 1951-52. The large increases brought about by amendments to the original P.L. 874 are evident in the early years of entitlement. Since FY 1955-56, however, rates of increase of local funds and P.L. 874 revenues have been similar.

Chart M4 also shows somewhat parallel trends, particularly since FY 1955-56, in the percentage of local funds relative to total operating revenues and in the percentage of nonfederal students in average daily attendance. Between FY 1949-50 and FY 1961-62, the trend in the percentage of revenues raised from local sources was generally downward. The increase in FY 1953-54 was occasioned by failure in that year to receive any state equalization funds (although other state funds were received). However, during that year, substantial increases in P.L. 874 entitlements (Table M6) brought about by the 1953 amendments allowed the local tax rate to be reduced. Since FY 1961-62, the percentage of funds received from local sources has increased more rapidly than has the percentage of nonfederal students in average daily attendance.

From these data one would conclude that, although federal funds have substituted for local funds to some degree (see also following section), local financial effort to support the educational program has not diminished but has remained at a consistently high level since the beginning years of the P.L. 874 program.

Consideration of P.L. 874 Funds in the Budgetary Process

During the beginning months of each fiscal year, which runs from July 1st to June 30th, the school staff begins the preparation of the superintendent's operating expenditure budget request for the following

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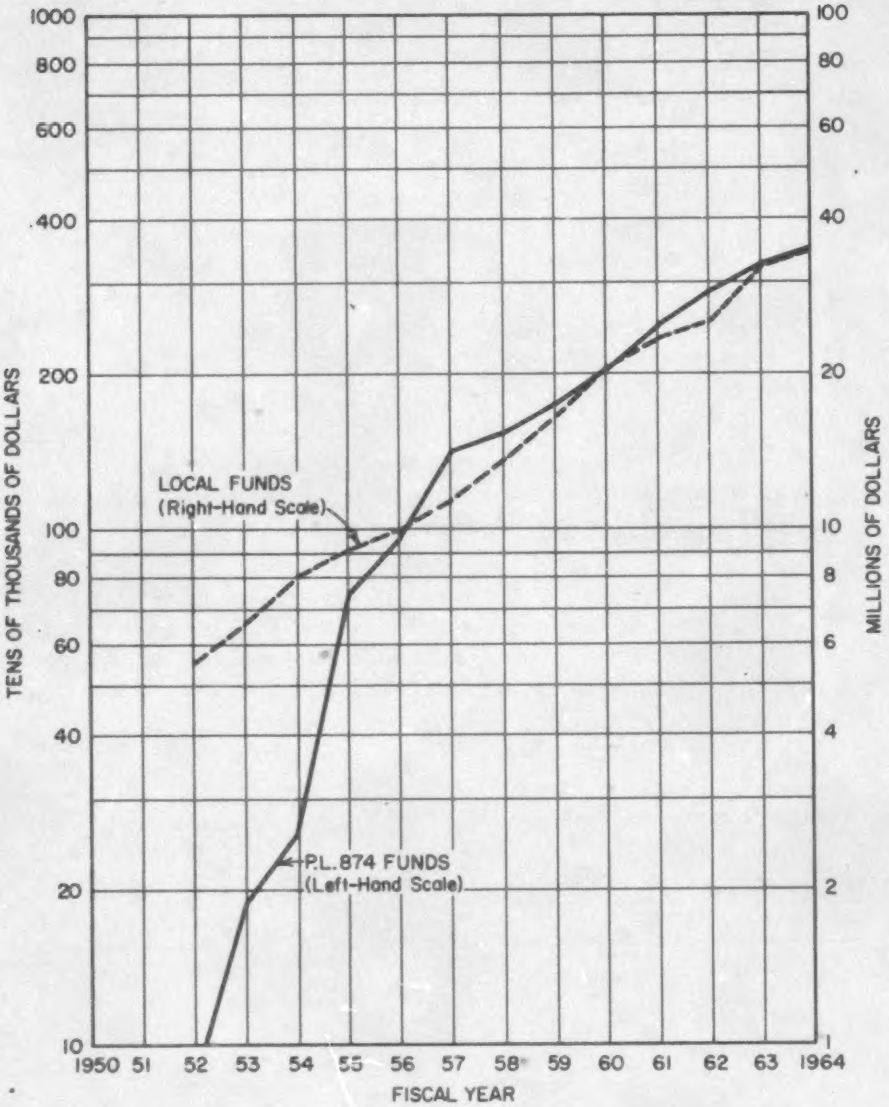
* In FY 1961-62, some 74.4% of all current funds in Montgomery County were from local sources, compared with 60.9% for the state. Baltimore County (74.8%) and Baltimore City (74.4%) were comparable to Montgomery County; other counties were considerably below the state average. See Ninety-Sixth Annual Report of the State Board of Education, Table 86, p. 183. Data include day school, handicapped children, school lunch and special milk programs, junior college, and adult education.

CHART M3

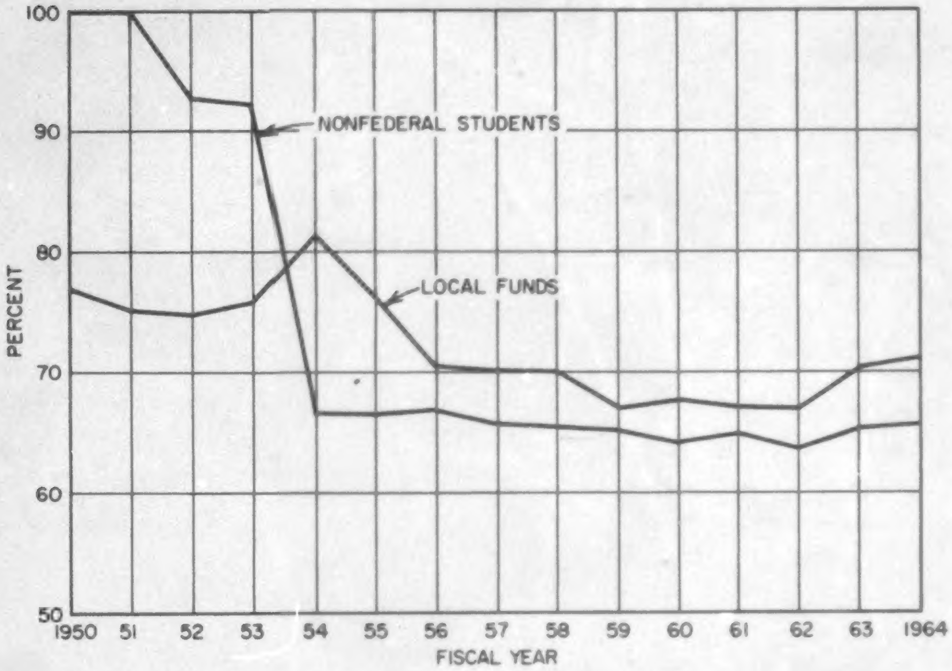
TRENDS IN CURRENT OPERATING REVENUE FROM LOCAL SOURCES AND P.L. 874 FUNDS FY 1951-52 TO FY 1963-64



SOURCE: Montgomery County Public Schools, Annual Financial Reports (See Table 6).

CHART M4

PERCENT OF CURRENT OPERATING FUNDS RECEIVED FROM LOCAL SOURCES AND PERCENT OF NONFEDERAL STUDENTS IN THE MONTGOMERY COUNTY PUBLIC SCHOOLS
FY 1949-50 TO FY 1963-64



SOURCE: Montgomery County Public Schools fiscal year. This request--called the Superintendent's Budget--is transmitted to the Montgomery County Board of Education in December. The Board considers the Superintendent's Budget, holds public hearings on its provisions, and makes a determination during February as to its recommendations to the County Council, in what is called the Board of Education Budget. The County Manager and his staff then consider the Board of Education Budget and prepare recommendations for the County Council. During March and the beginning of April, the County Council studies the Board's budget, makes a final determination of estimated needs and, prior to April 15th, approves the final budget (County Council's Budget) and establishes a tax rate to raise necessary funds which must be provided from local sources.

During the early stages of the budgetary process, estimates are made of probable revenues from funds other than local sources.* In the beginning years of its P.L. 874 entitlement, Montgomery County estimated P.L. 874 revenues by multiplying its estimates of federally connected ADA by the group rate furnished by the State Board of Education.† Since FY 1961-62, however, it has budgeted its P.L. 874 entitlements for expenditure in the fiscal year following that for which it was received. This policy allows more precise budgeting and also serves as a protection against a substantial underestimate if the P.L. 874 program should be curtailed or altered in a major way.

Within the first 45 days of each new school year (in October), each pupil enrolled in the schools is surveyed to determine if his parents live on and/or work on federal property.‡ Data compiled from the October survey are then used to estimate P.L. 874 entitlements for budgetary purposes. The RFS-1 form, reporting the results of the October survey--together with other information on the school system--is sent to the U.S. Office of Education in February or March. In April, a second pupil survey is conducted, on the basis of which the county receives approximately 80% of the

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* "All sources of revenue were carefully calculated prior to estimating the necessary local county funds to support the recommended expenditures." (From letter of transmittal accompanying the Superintendent's FY 1965-66 operating expenditures budget request to the Montgomery County Board of Education, dated December 16, 1964.)

† The group rate did not need to be estimated, since it was based on data from two years prior to the fiscal year for which budget estimates were being prepared.

‡ Montgomery County uses the two-survey method in establishing eligibility for P.L. 874 funds.

P.L. 874 funds for which it is eligible for that fiscal year. The final entitlement is not generally known or received until the following fiscal year (September to December), when RFS-3 is filed with the U.S. Office of Education (reporting final results of the two student surveys), and a regional representative of the U.S. Office audits the student surveys and other county records to determine the accuracy of the information submitted in the RFS-1 and RFS-3 reports. Thus, even though the P.L. 874 revenues are not considered during the budgetary process until the year following that for which entitlement is established, revenue is not known precisely until well into the following fiscal year and too late in the process to be known with complete accuracy. Because Montgomery County is not an area of rapid turnover of federally connected school children, however, the fall and spring student surveys produce similar results, and the budgetary estimates of P.L. 874 revenues are, therefore, extremely close to actual receipts.

During the budgetary process, estimates of revenues from state aid are also made before local source needs are considered. These estimates are not difficult to make, and potential revenues from state sources are known with some degree of accuracy prior to the submission of the Superintendent's Budget to the County Board of Education. Similarly, estimates are made of revenues from other sources (i.e., other federal programs, tuition fees, and miscellaneous sources) and unexpended balances from the current year's operation. The difference between recommended expenditures and estimated revenues from all nonlocal sources and unexpended balances then becomes the amount recommended to be funded from local sources.

In Maryland, no board of education may levy taxes directly; it must submit its budget recommendations to its county council for consideration and approval. County councils are permitted by state law to raise school revenues from any source from which the councils may legally derive revenue. However, the Montgomery County Council derives all school revenues from levies on real and personal property. The tax rate required to raise needed local funds for education is annually determined by the County Council at the time it considers and approves the education budget. But the approval of a budget and the establishment of a tax rate for current educational expenses are two separate, though related actions.

Throughout the budgetary process, P.L. 874 funds, as well as nonlocal funds from other sources, are treated as substitutes for local tax funds. Local funds raised are intended, then, to cover expenditures not funded from other sources, and the size of the local levy is thereby directly affected by P.L. 874 revenues.

Probable Effects of Withdrawal or Curtailment of P.L. 874 Funds in Montgomery County

The current entitlement of Montgomery County under the P.L. 874 program is approximately equivalent to the funds that would be raised locally by a 20¢ levy per $100.00 assessed valuation. Thus, if P.L. 874 funds were withdrawn, an increase in the tax rate of 20 cents would be required to maintain the same level of expenditures. As an alternative to an increase in the tax rate, expenditures could be reduced by curtailing portions of the educational program.

The precise effects of the withdrawal or significant curtailment of the P.L. 874 program are largely a matter of conjecture, but interviews with Board of Education and County Council budget officials indicate that local funds would probably not be forthcoming to match fully those P.L. 874 funds withdrawn. A partially compensatory tax increase probably would be acceptable, but parts of certain educational programs might have to be cut or eliminated. This does not mean that P.L. 874 revenues are used for nonessential programs; it means that the loss of approximately $3.5 million in P.L. 874 revenue would be considered as a financial problem of considerable magnitude which could not be solved by a fully compensatory increase in local revenues the first year. However, if P.L. 874 funds were withdrawn more gradually--over a period of several years rather than a two-year period as is now true for those school districts that fail to qualify after having received P.L. 874 funds--the financial burden would be somewhat less severe, the tax rate could be raised more gradually, and educational programs in the county would be relatively less likely to suffer.

Both the Montgomery County Council and Board of Education have changed political composition during the past few years and currently are more financially conservative than in the past. Although the school tax rate for current expenditures has been raised more than 20 cents upon two occasions (between FY 1958-59 and FY 1959-60, and between FY 1961-62 and FY 1962-63--see Table M14), it is probable that this large an increase would not be acceptable at present and that the educational program would therefore have to be somewhat curtailed.

The areas of possible retrenchment might include a reduction in the kindergarten program--for which no state aid is received--and special programs such as home economics, vocational education, and the education of handicapped children, even though there is an increasing interest in these types of programs at the national level. The largest share of educational expenditures in Montgomery County are salaries of teachers and other school personnel, supplies and materials, and fixed charges for the

Employee Benefit Plan (life insurance, hospitalization, surgical-medical coverage, and other benefits). These major expenditures are not likely to be reduced as long as enrollments continue to increase, and could only be relatively reduced by increasing class size, or decreasing the number of nonclassroom personnel assigned to schools or the central office. It is probable that any proposed curtailments in these areas would be met with much more resistance than in the curtailment of special programs and services.

Table M14

SCHOOL TAX RATES, MONTGOMERY COUNTY
FY 1950-51 to FY 1963-64

Year	Current Expenses	Debt Service	Capital Outlay	Total
1950-51	$1.17	$0.25		$1.42
1951-52	1.28	0.24		1.52
1952-53	1.28	0.33		1.61
1953-54	1.17	0.30		1.50
1954-55	1.23	0.30	$0.06	1.59
1955-56	1.30	0.31	0.06	1.67
1956-57	1.29	0.32	0.11	1.72
1957-58	1.41	0.36	0.06	1.83
1958-59	1.54	0.35	0.06	1.95
1959-60	1.80	0.33	0.06	2.19
1960-61	1.81	0.27	0.11	2.19
1961-62	1.85	0.29	0.07	2.21
1962-63	2.18	0.34	0.07	2.59
1963-64	2.10	0.37	0.07	2.54

Source: Director of Finance, Montgomery County.

IV ANALYSIS OF P.L. 815 PROGRAM IN MONTGOMERY COUNTY

School Construction Appropriations and Expenditures

The major portion of the public schools in Montgomery County have been constructed since FY 1950-51. Between that year and FY 1963-64, enrollment increased more than 3-1/2 times; annual increases ranged between 5,000 and 6,000 pupils in most years (see Table M1). To provide physical facilities for this number of pupils, a major construction program was necessary, and substantial capital expenditures have been required. Table M15 shows annual construction expenditures from FY 1950-51 to FY 1963-64. In total, they amounted to about $136.6 million, or approximately $1,876 for each new pupil.

Table M16 shows capital fund appropriations, state, and federal revenues, and bonded indebtedness for FY 1950-51 to FY 1963-64. During this period, bonded indebtedness increased by $73.5 million, and $123 million was appropriated from county funds; state revenues amounted to approximately $9.4 million, and P.L. 815 funds received amounted to approximately $18.3 million. Although not all local funds appropriated were actually spent, it seems clear that the major sources of revenue for capital construction were local appropriations and bonds. These amounted to about 80% of all expenditures during the period 1950-64; P.L. 815 funds amounted to about 13% of the funds expended for capital construction in Montgomery County. The adequacy of P.L. 815 funds in meeting the cost of providing space for increases in federally connected enrollment is discussed in Volume I of this report.

Use of P.L. 815 Funds in the School Construction Program

Because of the magnitude of enrollment increases over more than a decade and a half, the staff of the Montgomery County Public Schools regularly prepares population and enrollment projections, selects and acquires additional school sites, and supervises the design and construction of new schools. Each year in its capital budget, the Board of Education indicates the estimated costs of all needed school facilities. When approved by the County Council, this becomes the authorized construction program for the schools. Necessary county funds to cover costs of the construction program are then appropriated or raised through the sale of bonds.

Table M15

CAPITAL CONSTRUCTION EXPENDITURES IN MONTGOMERY COUNTY
FY 1949-50 to FY 1963-64

Year	Expenditures
1950-51	$ 5,268,521
1951-52	8,039,908
1952-53	7,393,519
1953-54	6,119,574
1954-55	4,456,685
1955-56	7,713,287
1956-57	9,341,005
1957-58	9,043,799
1958-59	8,457,659
1959-60	12,728,597
1960-61	14,951,360
1961-62	14,409,684
1962-63	14,468,786
1963-64	14,221,395
Total	$136,613,779

Source: Montgomery County Public Schools.

Because of the uncertainty of P.L. 815 revenues in any given year, appropriations are habitually made to cover the entire anticipated cost of construction. Then, if P.L. 815 funds are received, they are expended on a particular project in lieu of monies already appropriated. In this way, the total construction program continues without delay; and P.L. 815 funds are substituted for local funds as the federal funds become available.

In most years, state revenues have been applied to debt service rather than to the construction of new facilities.

Table M16

CAPITAL FUND APPROPRIATIONS, STATE, AND FEDERAL REVENUES, AND BONDED INDEBTEDNESS, MONTGOMERY COUNTY
FY 1950-51 to FY 1963-64

	Capital Appropriations	State and Federal Revenues			
Year	County Funds[*]	State Grants	State Incentive	P.L. 815 Funds	Bonded Indebtedness
1950-51	$ 6,598,575	$ 796,125	$ 75,350[†]	$ 0	$ 28,615,550
1951-52	7,034,991	265,009	75,850[†]	0	34,849,700
1952-53	8,000,000	0	74,073[†]	1,829,375	44,401,937
1953-54	4,000,000	0	40,339[†]	0	49,136,314
1954-55	7,202,999	0	62,783[†]	2,022,000	50,473,725
1955-56	6,063,550	0	79,103[†]	2,481,930	54,710,354
1956-57	5,756,810	0	317,940[†]	3,298,590	61,045,064
1957-58	7,516,537	134,296	640,058	0	60,932,355
1958-59	9,014,918	0	710,215	2,558,560	67,225,166
1959-60	9,003,611	0	787,064	2,395,895	70,931,170
1960-61	19,172,712	0	833,892[†]	0	77,744,984
1961-62	15,324,315	0	1,436,792[†]	0	86,444,125
1962-63	10,601,627	0	1,480,237[†]	3,545,927	97,198,468
1963-64	7,747,238	0	1,551,357[†]	174,587	102,136,918
Total	$123,037,883	$1,195,430	$8,165,053	$18,306,864	

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[*] County funds include proceeds from sales of abandoned school properties, and other miscellaneous sources, as well as appropriations.

[†] Funds applied to debt service.

Source: Montgomery County Public Schools, Annual Capital Expenditures Budget Requests.

In preparing plans and specifications for new schools, neither the school staff nor the architect knows whether the construction of a particular school will be funded from local or federal sources. When available, P.L. 815 funds are assigned to a particular project only after detailed plans and working drawings have been completed and the project is ready for bidding. Therefore, the receipt of federal funds is not reflected directly in types of facilities or construction materials that are different from those used where construction is funded locally.

The Montgomery County Board of Education has generally followed a policy of using P.L. 815 revenues in the construction of large new secondary schools. The primary reason for this policy is the avoidance of administrative difficulties incident to the use of P.L. 815 funds for the purchase of school equipment. By using all P.L. 815 revenues only for the construction of physical facilities, Montgomery County avoids the necessity of obtaining the prior approval of the Housing and Home Finance Agency for each equipment purchase and for any subsequent removal of equipment so purchased from one school to another if this should later prove desirable. By applying all P.L. 815 funds to large secondary schools, all federal revenues can be used only for buildings, thereby giving the school system a greater degree of flexibility in managing its construction program. School officials believe that the detailed accounting procedures necessary to purchase and maintain equipment are too restrictive and somewhat inconsistent with the relative lack of restrictions placed on local districts in using P.L. 874 funds.

The following tabulation shows the cost of constructing secondary schools in Montgomery County since FY 1949-50. Costs of gymnasiums and cafeterias (where funded separately) and incomplete projects have been excluded.

	Secondary Schools Constructed Wholly or Partially with P.L. 815 Funds	All Other Secondary Schools
Average cost per square foot	$ 15.07	$ 14.62
Average cost per student of capacity	1,786.57	1,488.56

A comparison of average costs per square foot of those projects that utilized P.L. 815 funds with those that did not indicates that federally assisted schools cost about 3% more than did nonfederally assisted schools--a relatively insignificant difference. However, the federally assisted schools cost about 20% more per student capacity than did nonfederally assisted schools.

The 3% difference in cost per square foot can be explained largely by differences in the cost of labor, since labor on federally assisted projects must receive wages at rates specified by the Department of Labor, which tend to be somewhat higher than wage rates paid on other school construction projects. The 20% difference in cost per student capacity seems to result primarily from two factors: (1) use of P.L. 815 funds in the construction of all new high schools and several new junior high schools built subsequent to FY 1951-52 while local funds were used primarily for additions to original buildings; and (2) use of P.L. 815 funds for considerably larger projects.* A larger share of local funds were, therefore, probably devoted to the construction of classrooms which added directly to student capacity while a greater share of P.L. 815 funds were used for general school facilities (e.g., offices, central heating facilities, and libraries). There seems to have been no attempt to expend federal funds for more costly or less necessary facilities.

Circumstances Incident to the Failure of Montgomery County to Qualify for P.L. 815 Funds in FY 1964-65

Although Montgomery County has received P.L. 815 funds since FY 1952-53, the county failed to qualify for entitlement during FY 1964-65. Two circumstances seem primarily responsible for this failure: (1) a slowdown in the rate of growth in enrollment, and (2) the increasing difficulty under P.L. 815 for larger districts to qualify.

P.L. 815 eligibility procedures require that an applicant school district estimate its anticipated growth in total and federally connected average daily membership (ADM) for a two-year "increase period." To receive P.L. 815 assistance, a school district must show that the estimated increase in federally connected pupils during the increase period will be more than 5% of the total (federal and nonfederal) ADM during the "base year." If the number of nonfederally connected pupils will have grown by less than 7% during the increase period, the number of federal pupils is reduced by the number of nonfederal pupils less than the number needed to meet the 7% requirement. In Montgomery County, where total ADM in FY 1964-65 is approximately 100,000 and where federally connected ADM is about 35,000, nonfederal pupils must increase by 4,550 (7% of 65,000 nonfederal ADM), and federally connected pupils must increase by 5,000 (5% of total ADM) in two years in order for the county to receive P.L. 815 funds. Thus, more than half of the increase must be federal pupils, and although total ADM will probably increase by nearly 10,000, the percentage of federal pupils will probably not be greater than 35-40% unless the opening of the new Bureau of Standards facility brings with it substantial numbers of federally connected pupils. During the current (FY 1964-65) year, with no new facility such as the Bureau of Standards opening, with a slightly decreasing rate of total growth. and in spite of a change in the system of counting kindergarten pupils (as half pupils rather than full pupils),* Montgomery County has been unable to qualify for P.L. 815 entitlement.

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* Between FY 1949-50 and FY 1963-64, 12 projects utilizing P.L. 815 funds were completed at an average cost of $2,158,767, adding an average student capacity of 1,208; during this same period, 48 projects were completed without P.L. 815 funds at an average cost of $698,538, adding an average student capacity of 469. The differential between federal and local projects is considerably greater for senior high schools where local funds were used only for additions.

In a district with a total ADM of 50,000 and 35% federally connected ADM, as in Montgomery County, the required percentage of federal to total students among the membership growth would be less the 50%. The increasing size of the public school enrollment in Montgomery County thus increases the requirement for eligibility, a requirement which probably can no longer be met. The cost of providing necessary physical facilities for the estimated 2,000 annual increase in federally connected ADM--a cost of about $3,750,000 per year (2,000 times $1,875 per student)--must henceforth be borne from local sources.

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* A smaller percentage of federal pupils than nonfederal pupils is enrolled in kindergarten (Table M9).

V SUMMARY AND CONCLUSIONS

Because of its relatively large enrollment and high percentage of students which are federally connected, Montgomery County receives a substantial amount of P.L. 874 funds each year.* Nonetheless, on the basis of calculations made for FY 1962-63, P.L. 874 receipts do not equal the costs of educating federally connected students.

In FY 1962-63, the differential payment necessary to provide federally connected pupils with the same amount of contribution to local revenues as nonfederally connected pupils was approximately $4.6 million; P.L. 874 receipts in that year were less than $3.3 million or about 70% of the calculated necessary revenue. The major reason for this differential was a per pupil payment to the district that was based on the average local contribution rate of all Maryland counties, all but one of which have a considerably lower rate than does Montgomery County. The calculation of this group rate based on data from the second fiscal year preceding that for which payment is made is another major source of undercompensation, since per pupil expenditures from local sources in Maryland have been rising at the rate of 7.5% per year in recent years. The method used in Maryland of calculating expenditures from local sources and the higher per pupil costs of educating federally connected students in Montgomery County (primarily because a greater percentage of federal students are in the upper grades where costs are higher and because of uncompensated costs to the district of qualifying for P.L. 874 funds) also account for part of the difference between calculated necessary payments and actually P.L. 874 receipts.

Although the sources of undercompensation outweigh those of overcompensation in Montgomery County, some of the latter sources are also of considerable magnitude, the major ones being the following: (1) the substantial difference between the assessed valuation of residential and industrial properties within the county as compared with the ratio of residential to industrial properties assumed under P.L. 874; (2) differences in the average assessed valuation of residential properties owned by federally connected families and those without federal connection; and (3) failure to distinguish under P.L. 874 between pupils whose federal connection results from the employment of secondary workers (working mothers of students whose fathers are employed in nonfederal jobs) rather than primary workers only.

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* In FY 1962-63, only two school districts in the continental (coterminous) United States received more P.L. 874 funds than did Montgomery County--Fairfax County (Virginia), and San Diego County (California).

The receipt by the Montgomery County Public Schools of about $21 million in P.L. 874 funds during FY 1951-52 through FY 1963-64 has been extremely important in helping to finance the increased cost of education, extending services, raising teachers' salaries, and making other improvements in public education. They have not been expended for specific purposes, but have become part of general operating revenues used to meet current obligations of the schools. Since federally connected students are not distinguished from other students within the school system, it has not been possible to conclude whether certain programs were made possible, or necessary, because of P.L. 874 entitlement or federally connected enrollment.

The 1953 amendments to P.L. 874 that allowed children of persons working in federal jobs located outside the state (e.g., in Washington D.C. and Virginia) to qualify for entitlement resulted in Montgomery County's being able to establish federal connection in FY 1953-54 of 33% of its ADA compared with 8% the previous year. This increase was reflected in substantially greater P.L. 874 receipts and a parallel decrease in the local tax rate for schools. During the past several years, however, rates of increase of local funds and P.L. 874 revenues have been similar. In the preparation of its operating budget and the establishment of a tax rate sufficient to meet proposed expenditures, the Montgomery County Board of Education and County Council consider both P.L. 874 and state aid funds as substitutes for local tax funds. In spite of this substitution, local financial effort to support the educational program has not diminished, but has remained at a consistently high level since the beginning years of the P.L. 874 program.

The withdrawal of federal payments to the Montgomery County schools would be considered as a financial problem of considerable magnitude, and an increase in the tax rate of about 20 cents per $100.00 in assessed valuation would be required to maintain the same level of expenditures. Although the school tax rate for current expenditures has been raised more than 20 cents upon two separate occasions since the establishment of the P.L. 874 program, it is probable that this large an increase would not be acceptable at present. Interviews with local officials indicate that a partially compensatory tax increase would probably be forthcoming but that certain educational programs might have to be eliminated if P.L. 874 funds were withdrawn.

Montgomery County has received about $18.3 million in P.L. 815 funds to aid in its school construction program. These funds--equal to about 13% of construction expenditures since FY 1950-51--have been nearly sufficient to cover the cost of constructing facilities for federally connected students that has not been met from local sources. (See Volume I.) Local sources have provided the bulk (80%) of construction funds, state aid the remainder.

P.L. 815 funds received by the county have been used almost exclusively for the construction of large new secondary schools, including all the new senior high schools constructed since FY 1951-52. Use of federal funds for the purchase of equipment or for other purposes has been avoided because of administrative difficulties and extra accounting procedures necessary to obtain prior approval for the purchase of each item of equipment and maintaining records and equipment according to federal regulations.

The average cost per square foot of the buildings constructed with P.L. 815 funds has been about 3% higher than similar buildings constructed without federal funds, primarily because of a slight differential in wage rates required where federal monies are utilized. The use of P.L. 815 funds for the construction of large new secondary schools is reflected in about a 20% differential in cost per student capacity between federally aided and other secondary school projects. Because local funds have been utilized largely for additions to school facilities, it is probable that a larger share of these funds has been utilized for classroom construction (which is directly reflected in increased student capacity) than in federally aided projects. However, there seems to have been no attempt to expend federal funds for more costly or less necessary facilities.

Montgomery County failed to qualify for P.L. 815 funds for FY 1964-65, because its rate of growth of federally connected pupils did not meet the necessary requirements. With a total ADM of approximately 100,000, an annual increase of 5,000 federally connected students (5% of total ADM) is required for qualification. This figure amounts to more than 50% of the total annual increase in ADM in the Montgomery County Public Schools and cannot be met, at present, by normal growth in federal employment in the county.

A STUDY OF
THE OPERATION OF PUBLIC LAWS 874 AND 815 IN PHILADELPHIA, PENNSYLVANIA

By: Keith E. Duke

I INTRODUCTION

Reasons for Selection of Philadelphia

The School District of Philadelphia was selected for case study because: (1) it was the largest school district in the country to qualify for P.L. 874 funds and one of the few to qualify under the 6% rule; (2) a substantial number of federal facilities existed in the area, most but not all of them military; (3) the district had qualified for P.L. 874 payments only relatively recently, so that the effects of receiving P.L. 874 funds could more easily be seen; (4) it was a relatively stable district, not increasing rapidly in enrollment; and (5) the area possessed most of the socioeconomic characteristics and educational problems of the large city district. It was hoped that the Philadelphia study would illustrate some of the more important aspects of financing public education in large cities, so that the operation of P.L. 874 in similar situations might be better understood.

Characteristics of the Philadelphia Area

Philadelphia is one of the oldest and largest American cities. Its population in 1960 exceeded 2 million and nearly a quarter million students were enrolled in the public schools. However, the city has not shared to the same degree as many other areas in recent national economic growth. Between 1952 and 1962, total job opportunities within the city declined by 90,000, or by slightly over 8%. Declines in manufacturing accounted for about 70% of the loss (about 63,000 jobs) and direct federal employment also decreased by 20,000.* As a result of these trends, the city has been decreasing in population, and unemployment has been a considerable problem.

Table P1 shows selected population, income, employment, housing, and educational characteristics for the city, compared with the metropolitan area, Pennsylvania, and the United States. By nearly every measure, there

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* Philadelphia Economic Development Committee, Overall Economic Development Program, City of Philadelphia, 1964, pp. 26, 31.

Table P1

SELECTED POPULATION, INCOME, EMPLOYMENT, HOUSING, AND EDUCATIONAL CHARACTERISTICS OF PHILADELPHIA AND PENNSYLVANIA

1960

	City of Philadelphia	Philadelphia Urban Fringe	Philadelphia SMSA	Pennsylvania	United States
Population					
Percent increase, 1950-60	-3.3 %	46.3 %	18.3 %	7.8 %	18.5 %
Percent nonwhite	26.7 %	6.3 %	15.7 %	7.6 %	11.4 %
Median age	33.4	n.a.	31.5	32.0	29.5
Percent rural farm	0 %	n.a.	0.9 %	3.1 %	7.5 %
Population per household	3.16	3.47	3.32	3.30	3.29
Income (1959)					
Median family income	$5,782	$7,230	$6,433	$5,719	$5,660
Percent under $3,000	17.1 %	8.5 %	13.0 %	16.8 %	21.4 %
Percent $10,000+ and over	14.2 %	25.2 %	19.1 %	13.9 %	15.1 %
Employment (percent)					
Government workers	11.5 %	9.3 %	10.3 %	16.8 %	12.2 %
Self-employed	7.4	9.3	8.4	9.2	12.2
White collar occupations	40.8	51.1	44.1	29.5	41.1
Manufacturing	33.2	37.3	35.8	36.4	27.1
Worked 50 weeks or more (1959)	61.4	64.4	62.1	56.8	56.8
Civilian labor force unemployed	6.5	3.5	4.9	6.2	5.1

Table P1 (concluded)

	City of Philadelphia	Philadelphia Urban Fringe	Philadelphia SMSA	Pennsylvania	United States
Housing					
Percent of occupied housing units occupied by owners	61.9%	77.5%	69.9%	68.3%	61.9%
Median value of owner-occupied housing	$8,700	n.a.	$10,900	$10,200	$11,900
Median gross rent of renter-occupied housing	$65	n.a.	$70	$64	$71
Education					
Median school years completed by persons 25 years or older	9.6	11.7	10.5	10.2	10.6
Percent children age 14-17 years in school	84.4%	90.9%	87.2%	87.8%	87.4%
Percent of elementary school children in public schools	60.7%	65.0%	66.3%	75.8%	85.6%

Source: U.S. Bureau of the Census, Censuses of Population and Housing: 1960.

are substantial differences between the city of Philadelphia and the urban fringe around the city. The Philadelphia SMSA compares well with Pennsylvania in population growth, median family income, employment, and other characteristics. However, this is largely due to the influence of the Philadelphia suburbs rather than to the central city. Within the city, unemployment is high, the percentage of nonwhites is high, median income is low, and educational attainment by adults (persons over 25 years) is low. Significantly, in the city, the percentage of children enrolled in private schools is also high, the percentage of government workers is high, whereas the median value of owner-occupied housing (from which much of the property taxes used to support the schools is derived) is low relative to suburban areas. (Table P1.)

Trends in P.L. 874 Entitlements and Local Financial Efforts

The School District of Philadelphia, one of the largest school districts in the country with well over 35,000 ADA in FY 1938-39, has been under the 6% eligibility requirement (Section 3(c)(3) of P.L. 874) since the beginning of the program of school aid to federally affected areas. (See Volume I, Chapter 4.) In the beginning years of the P.L. 874 program, school officials believed that insufficient numbers of federally connected pupils were enrolled in the public schools to establish eligibility under the 6% requirement. Moreover, since large school districts were not reimbursed for the first 3% of their entitled students, it was believed that the expenditure of time and funds necessary to survey more than 200,000 pupils* would probably be too great when compared with potential receipts of federal funds, even though the district were able to qualify for P.L. 874 entitlements. However, when the 3% absorption requirement for large districts was dropped, by the 1958 amendments to P.L. 874, Philadelphia did establish eligibility with 6.3% of its ADA in 1958-59 being federally connected pupils. Since that year, 14,000 to 15,000 pupils in average daily attendance have been federally connected (6.4% to 6.6% of total ADA, excluding tuition students), allowing Philadelphia to qualify for P.L. 874 payments during each of the past 6 years. Table P2 shows ADA by type of student for school years 1958-59 through 1963-64.

Nearly all of the federally connected pupils for whom funds are received are 3(b)2 students, i.e., those who do not live on federal property but have a parent who is employed on federal property. The Philadelphia Naval Base is the largest employer of parents of public school

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* Fall membership in the Philadelphia public schools was 216,610 in 1950.

Table P2

AVERAGE DAILY ATTENDANCE, SCHOOL DISTRICT OF PHILADELPHIA
1958-59 to 1963-64

Type of Student	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
Federally entitled						
3(a)	96.9	93.6	99.5	101.7	123.4	357.6
3(b)1	0	0	0	0	0	5.0
3(b)2	13,253.0	14,100.7	14,087.1	14,492.5	14,933.8	14,625.9
Total Section 3	13,349.9	14,194.3	14,186.6	14,594.2	15,057.2	14,988.5
Nonfederal nontuition	197,972.7	201,884.7	203,798.4	205,674.0	212,087.3	218,739.1
Total (excluding tuition)	211,322.6	216,079.0	217,985.0	220,268.2	227,144.5	233,727.6
Tuition	217.8	198.0	608.4	673.4	801.3	828.5
Total	211,540.4	216,277.0	218,593.4	220,941.6	227,945.8	234,556.1

Source: School District of Philadelphia.

pupils, but more than 1,000 students also have parents employed at the National Defense Industrial Supply Activity, the Frankfort Arsenal, the Defense Clothing and Textile Supply Center, and the Philadelphia Army Supply Depot. Nearly 85% of the 3(b) pupils in the public schools have parents who work on federal properties in the Philadelphia area; comparatively few parents commute to federal jobs in other parts of Pennsylvania or in other states, although about 1,300 work across the river in New Jersey. (See Table P3.)

During the 6 fiscal years* that it has been eligible for P.L. 874 entitlements, Philadelphia has received approximately $13 million in federal funds. The school district received slightly less than $2.5 million in FY 1964 from the P.L. 874 program, about 95% of it for 3(b) pupils. (See Table P4.)

Chart P1 shows trends in total operating revenues and Table P5 shows the percentage of operating revenues, by source, for the Philadelphia public schools for the years 1950 through 1963. Local sources have accounted for most of the operating revenue each year, although state appropriations have grown in importance, particularly since 1956, and currently account for nearly one-third of all operating revenue. Federal revenues accounted for only 1-1/2 to 3% of total revenues between 1959 and 1963.

Chart P2 shows several indexes of local effort relative to the average for all school districts in Pennsylvania. The amount of local revenue per ADA is significantly higher than the state average, although it has declined steadily since 1951; total current expenditures in Philadelphia are higher than the state average but not significantly so. From data on the chart it is also apparent that the Philadelphia schools receive less than the average amount of state aid appropriations per ADA. Both assessed value per ADA and tax rate per assessed value, however, substantially exceeded the state average for the years in which these data were available.

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* The School District of Philadelphia operates on a fiscal year basis that corresponds with the calendar year.

Table P3

PUPILS RESIDING ON FEDERAL PROPERTIES AND PUPILS WITH PARENT EMPLOYED ON FEDERAL PROPERTIES
PHILADELPHIA
1963-64

	Number of Pupils
Pupils residing on federal properties, parent employed on federal property--3(a)	
Decatur Homes	345
Philadelphia Naval Base	67
Others (4)	36
Total	448
Pupils residing on federal property, parent not employed on federal property--3(b)1	
Decatur Homes	6
Pupils not residing on federal property, parent employed on federal property--3(b)2	
Philadelphia	
Philadelphia Naval Base	4,935
National Defense Industrial Supply Activity	2,303
Frankfort Arsenal	2,192
Defense Clothing and Textile Supply Center	1,387
Philadelphia Army Supply Depot	1,228
Electronics Materiel Agency	729
Veterans Administration	706
Marine Corps Supply Activity	512
Others (18)	1,626
Subtotal	15,618

Table P3 (concluded)

	Number of Pupils
Pupils not residing on federal property, parent employed on federal property--3(b)2 (cont)	
Other Pennsylvania	
Westinghouse (B Area), Lester, Pa.	591
Others (25)	760
Subtotal	1,351
Other States	
New Jersey (30)	1,306
New York (19)	142
Maryland (7)	77
Delaware (4)	83
Subtotal	1,608
Total	18,577

Note: Includes pupils with parents in Armed Forces.

Source: School District of Philadelphia.

Table P4

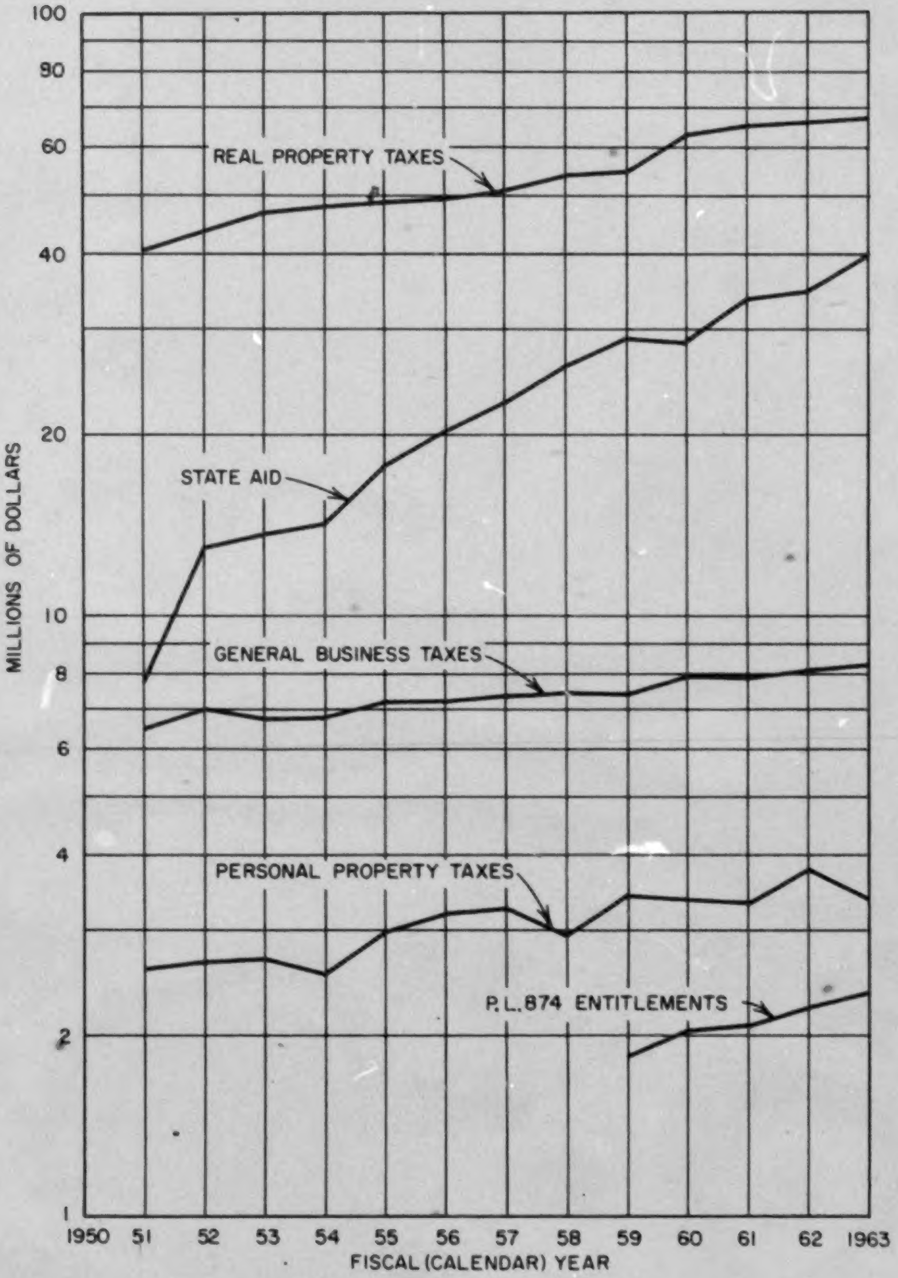
P.L. 874 ENTITLEMENTS BY CATEGORY OF STUDENT, SCHOOL DISTRICT OF PHILADELPHIA 1959-1964

Type of Student	1959	1960	1961	1962	1963	1964
Federally entitled						
3(a)	$ 26,670	$ 27,204	$ 28,646	$ 30,954	$ 39,397	$ 115,150
3(b)1	0	0	0	0	0	1,608
3(b)2	1,806,225	2,008,650	2,038,107	2,172,531	2,391,680	2,342,738
Subtotal	$1,832,895	$2,035,854	$2,066,753	$2,203,485	$2,431,077	$2,459,496
Less 3(e) receipts	709	0	0	0	0	0
Net entitlement	$1,832,186	$2,035,854	$2,066,753	$2,203,485	$2,431,077	$2,459,496

Source: School District of Philadelphia.

CHART P1

GENERAL FUND REVENUE RECEIPTS, BY SOURCE
SCHOOL DISTRICT OF PHILADELPHIA
1950-1963



SOURCE: School District of Philadelphia.

Table P5

PERCENTAGE OF OPERATING REVENUE RECEIPTS, BY SOURCE
SCHOOL DISTRICT OF PHILADELPHIA
1950-1963

	Real Estate Taxes	General Business Taxes	Personal Property Taxes	Mercantile Taxes	Pari-Mutuel Betting	Ground Rents	Miscel-laneous Revenue	Subtotal Local Sources	State Appro-priation	P.L. 874	Total
1950	69.81%	10.50%	4.53%	0.17%	%	%	0.98%	85.99%	14.01%	%	100%
1951	70.08	11.10	4.47	0.07			0.90	86.62	13.38		100
1952	65.25	10.45	4.00	0.06			0.77	80.53	19.47		100
1953	66.72	9.61	3.86				0.76	80.95	19.05		100
1954	66.24	9.37	3.50				0.79	79.90	20.10		100
1955	71.88	10.69	4.41				0.83	87.81	12.19		100
1956	55.56	8.13	3.60				0.72	68.01	31.99		100
1957	60.42	8.74	3.86				0.83	73.85	26.15*		100
1958	60.36	8.29	3.28				0.82	72.75	27.25		100
1959	54.71	7.35	3.41				0.79	66.26	31.99	1.75	100
1960	59.75	7.54	3.20				1.02	71.51	26.93	1.56	100
1961	57.12	6.92	2.94				1.04	68.02	29.48	2.50	100
1962	56.84	6.99	3.26				1.30	68.39	29.90	1.71	100
1963	53.95	6.65	2.71		0.52	0.01	1.35	65.19	31.95	2.86	100

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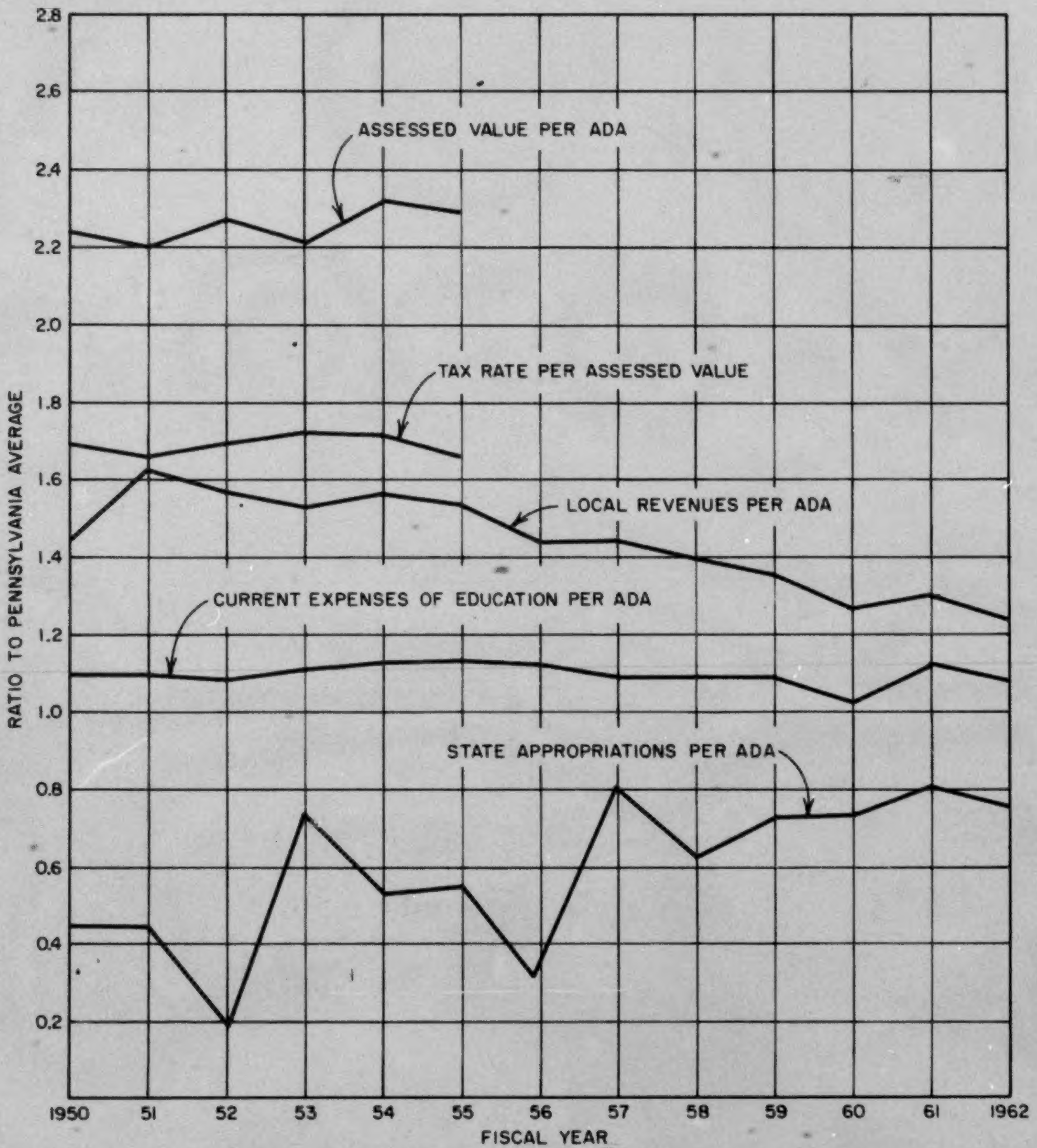
* State Appropriation of $21,873,400.50 includes $1,339,082.58 1956 state appropriation paid in 1957.

Source: School District of Philadelphia, Annual Reports of the Secretary and Business Manager.

CHART P2

INDEXES OF LOCAL EFFORT
PHILADELPHIA TO PENNSYLVANIA AVERAGE
FY 1950-1962



SOURCE: Commonwealth of Pennsylvania, Dept. of Public Instruction, Statistical Report of the Superintendent of Public Instruction, 1950-1962.

II COSTS AND SOURCES OF REVENUE FOR EDUCATING FEDERALLY CONNECTED PUPILS IN PHILADELPHIA

Determination of Cost Revenue Differences for Federal and Nonfederal Pupils

As explained in Volume I, the following equation was developed and used in helping to determine if P.L. 874 payments have met the differential cost of educating federally connected pupils:

$$F_e = L_n \left(\frac{N_f}{N_n} \right) - L_f + A$$

where

F_e = the federal payment required to create an equal rate of revenue for each child, federal and nonfederal;

L_f = local revenues derived from the families of federally connected pupils;

L_n = local revenues derived from the families of nonfederal pupils;

N_f = number of federally connected pupils in average daily attendance for the school year;

N_n = number of nonfederal pupils in average daily attendance for the school year; and

A = additional costs entailed in qualifying for P.L. 874 entitlement and in educating federally connected students.

In the above equation, F_e should equal the amount of P.L. 874 funds received in that year if revenues are the same for federal and nonfederal pupils; any difference between the calculated F_e and actual P.L. 874 payments, then, represents the calculated "overpayment" or "underpayment" received by the school district. The accounting for state aid funds is not necessary in the equation, since Pennsylvania makes no distinction between federal and nonfederal pupils and does not offset P.L. 874 or other federal payments to schools.

Before the equation can be used to solve for F_e, the values of the other terms must first be calculated or estimated. The values of N_f and N_n (the number of federal and nonfederal pupils in ADA) are tabulated by the school district each year as a basis for P.L. 874 entitlement. However, in order to make a more precise calculation of the local tax funds associated with each pupil, it is necessary to adjust ADA figures on the assumption that pupils whose federal connection is established because their mothers work on federal properties but whose fathers (heads of households) work on taxable properties are really no different from nonfederal pupils. Precisely how many of these pupils are in the Philadelphia public schools is unknown, but a reasonable estimate would be about 5%.* Reported ADA data have, therefore, been adjusted as follows for the school year 1962-63.†

Students	Reported ADA	Adjustment	Calculated ADA
N_f	15,057	-747	14,310
N_n	212,087	+747	212,834

The determination of the values of L_f and L_n is somewhat more difficult. In FY 1962-63, calculated expenditures from local sources were $73,293,794. This figure was derived as shown in Table P6. Expenditures from real estate revenues (M) may be calculated by applying the expenditure/revenue percentage ($73,293,794/$77,438,486 or 94.65%) to revenues derived from real estate, current and delinquent. Thus:

$$M = (\$63,792,806 + \$2,087,262)(0.9465)$$

$$= \$62,355,484$$

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* According to the U.S. Census of Population, 1960, some 59,784 males and 30,661 females were government workers. This ratio of approximately 2:1 may be different for federal government employees than for total government workers; and women who work for the federal government undoubtedly have fewer children in the public schools than do male federal employees. Nevertheless, it is estimated that at least 5% of the federally connected pupils in the Philadelphia schools qualify because of secondary working mothers.

† The school year 1962-63 has been selected for use in this analysis because it was the latest year for which data were available.

Table P6

CALCULATION OF EXPENDITURES FROM LOCAL SOURCES AND LCR
PHILADELPHIA
FY 1962-63*

Allowable receipts		
Current real estate taxes	$ 63,792,806.00	
Other local taxes	10,859,180.00	
Delinquent taxes, all levies	2,876,500.50	
Subtotal local revenues	$ 77,438,486.50†	(a)
State appropriations	37,223,394.50	
P.L. 874 receipts	2,296,128.50	
Other federal receipts (NDEA)	163,930.00	
Payments in lieu of taxes	199,320.00	
Total revenues all sources	$117,321,259.50	(b)
Derivation of local percentage		
Local revenue/total revenue (a/b)	66.006%	
Current expenses		
Total current expenses	$110,576,187.30	
Allowable capital outlay expenses	568,601.07	
Subtotal	$111,144,788.37	(c)
Less tuition receipts	103,679.50	(d)
Total allowable current expenses	$111,041,108.87	(e)

Calculation of Expenditures from Local Sources

Total allowable current expenses times local percentage (66.006% of (e))	$ 73,293,794.34	(f)

Calculation of Local Contribution Rate

Expenditures from local sources/total ADA ((f)/227,893)	$321.61

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* Since the School District of Philadelphia uses a fiscal year based on the calendar year, data for the FY 1962-63 shown here were derived by totaling figures for 1962 and 1963 and dividing by 2.

† There is an apparent error in arithmetic in this total; the correct figure is $77,528,486.50. Therefore (b) should be $117,411,259.50; the local percentage should be 66.032%; (f) should be $73,322,665.

Source: Bureau of School Business Services, Department of Public Instruction, Commonwealth of Pennsylvania.

The valuation of real and personal properties by type is not known for FY 1962-63; however, the following tabulation gives the percentage distribution of gross assessed value of locally assessed real property, as determined by the U.S. Bureau of the Census, for 1961.

Type of Property	Percent of Gross Value
Nonfarm residential	60.9%
Acreage and farms	--
Vacant lots	1.1
Commercial and industrial	36.7
Other and unallocable	1.2

If the percentage distribution of revenues and expenditures were the same for FY 1962-63 as were assessed values of real properties in 1961, expenditures by the School District of Philadelphia from residential revenues would have been $37,974,490 ($62,355,484 multiplied by 0.609). This figure has been used as the value of M_r in subsequent calculations.

It is not known if the average family size is different for federally connected and nonfederally connected families in Philadelphia. Neither is it known if the age distribution or number of children in private schools is different for federal and nonfederal families. Consequently, these factors were ignored in the calculations of school revenue derived from federal and nonfederal pupils in the public schools. Estimates were made, however, of the average value of residential properties of federal and nonfederal families, based on the distribution of federal and nonfederal pupils within the 8 school districts of Philadelphia. The average value for federal families (R_f) was calculated to be $8,004; the average value for nonfederal families (R_n) was calculated to be $7,946. While these values are admittedly only approximations, they indicate that federal and nonfederal families, on the average, live in substantially the same type of housing. Differences are so small that they could have been ignored without significantly altering the calculated value of F_e.

With the values of necessary factors computed, the calculations of L_f and L_n were made as follows:

$$L_f = \left(\frac{N_f - N_{3a}}{N - N_{3a}}\right)\left(\frac{R_f}{R_n}\right) M_r$$

$$L_n = L - L_f$$

where

N = total ADA

N_{3a} = number of 3(a) pupils in ADA

R_f = average value of residential properties of families with federal jobs

R_n = average value of residential properties of nonfederal families

M_r = expenditures from revenues derived from residential properties

L = expenditures from local sources

$$L_f = \left(\frac{14{,}310 - 123}{227{,}144 - 123}\right)\left(\frac{\$8{,}004}{\$7{,}946}\right) \$37{,}974{,}490$$

$$\doteq \left(0.0625\right)\left(1.0073\right) \$37{,}974{,}490$$

$$= 2{,}390{,}732$$

$$L_n = \$73{,}293{,}794 - \$2{,}390{,}732$$

$$= \$70{,}903{,}062$$

In calculating the value of A, it was found that the cost of educating federally connected pupils was slightly higher than the cost of educating nonfederal pupils because a greater percentage of federally connected students were in high school where costs are higher and a smaller percentage were in elementary school where costs are lower. In addition, administrative costs to the school district in qualifying for P.L. 874 entitlement are substantial, and all are entirely associated with federally connected pupils. The differential in costs between federal and nonfederal pupils because of differences in grade of enrollment was estimated to be \$141,955; administrative costs, estimated at \$1.00 per ADA, amounted to \$227,144. The calculated value of A was, therefore, \$369,099.

Using the values obtained for N_f, N_n, L_f, L_n, and A, the value of F_e for the year 1962-63 was calculated as follows:

$$F_e = L_n \left(\frac{N_f}{N_n}\right) - L_f + A$$

$$= \$70{,}903{,}062 \left(\frac{14{,}310}{212{,}834}\right) - \$2{,}390{,}732 + \$369{,}099$$

$$= \$70{,}903{,}062\ (0.0672) - \$2{,}021{,}633$$

$$= \$4{,}764{,}686 - \$2{,}021{,}633$$

$$= \$2{,}743{,}053$$

The amount of P.L. 874 funds received by the School District of Philadelphia for FY 1962-63 was $2,431,077. The calculated underpayment was, therefore, $311,976.

Reasons That P.L. 874 Entitlements Differ from Calculated Cost-Expenditure Differential

Except for the incremental costs to the school district of qualifying for entitlement and educating federally connected pupils, the calculated cost-expenditure differential (F_e) and actual P.L 874 receipts (F) for 1962-63 in the School District of Philadelphia were within approximately $53,000, or 2.3% of equaling each other. These incremental costs are not accounted for under the present law, whereas they have been accounted for in calculating F_e. Other factors that tend to produce disparities between F_e and F largely balance each other. In Philadelphia, two factors that produce disparities in other districts--(1) differences between the 50:50 residential-industrial ratio of assessable properties assumed under P.L. 874 and the ratio that actually exists, and (2) differences in the average value of residential properties of federal and nonfederal families--are extremely small. In 1962-63, the actual residential-industrial ratio was 5007:4993; differences in household values were also less than 1%.

Table P7 shows the relative importance of the various groups of factors responsible for the difference between F_e and F. They are also discussed individually in subsequent paragraphs.

Table P7

RELATIVE IMPORTANCE OF FACTORS RESPONSIBLE FOR DIFFERENCE BETWEEN F_e AND F
SCHOOL DISTRICT OF PHILADELPHIA
1962-1963

Factor	Amount
Use of different ADA and LCR* (F = 7,590 ADA x \$320.30 LCR) (F_e = 7,206.5 ADA x \$333.22 LCR)	+\$29,727
Difference in residential value, federal and nonfederal families	+18,490
Other factors†	+8,906
Subtotal	+\$57,123
Incremental costs incident to qualification and educating federally connected pupils	-\$369,099
Difference (F_e - F)	-\$311,976

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* In calculation of F, 3(a) pupils counted as 1; 3(b) pupils as 0.5; in calculation of F_e, 3(a) pupils counted as 1; 3(b) pupils as 0.4993.

† Includes small errors resulting from estimating procedures and rounding; see also footnotes Table P6.

Source: Stanford Research Institute.

Use of the Second Preceding Year in Calculating Local Contribution Rates

The use of a local contribution rate calculated on data from the second preceding year tends to undercompensate for current costs. Although costs have not been rising rapidly in Philadelphia in recent years, LCR's for the second preceding year, both for Philadelphia and its comparable districts, have been consistently lower than current costs. The LCR of the districts comparable with Philadelphia was $30.49, or about 9-1/2%, higher in FY 1962-63 than in FY 1960-61. This difference amounted to $227,669 in P.L. 874 entitlements to Philadelphia in FY 1962-63.

Use of an LCR That Is Different from That of Philadelphia

In Philadelphia, the "undercompensation" resulting from the use of an LCR from the second preceding year is roughly balanced by "overcompensation" resulting from the use for entitlement purposes of an LCR that is higher than that of the Philadelphia schools.

There is no other school district in Pennsylvania that is closely comparable to that of Philadelphia. The Pittsburgh school district falls under the same legal classification (Class 1), but it has only one-third as many pupils as the Philadelphia schools. Other characteristics of the Pittsburgh district also differ from those of Philadelphia, but it is probably as nearly comparable a district as exists within the commonwealth. Two other of the larger districts* (10,000 ADA or more) are averaged with Pittsburgh in determining the LCR for districts comparable to Philadelphia and, although a serious attempt is always made in the Department of Public Instruction to derive an LCR as close as possible to that of Philadelphia, it has consistently been a few dollars higher.

In FY 1962-63, the LCR of comparable districts was over $29.00 higher than that of Philadelphia. However, the LCR of the comparable districts for FY 1960-61 (applicable to Philadelphia entitlements in FY 1962-63) was only $1.31 lower than the Philadelphia LCR for FY 1962-63 (see Table P8). Thus Philadelphia was "overcompensated" by $217,887 in FY 1962-63 because of the differences in LCR's, but this figure was within $10,000 of the calculated "undercompensation" because of the use of an LCR from the second preceding year.

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* Erie, Reading, Allentown, and Harrisburg.

Table P8

LOCAL CONTRIBUTION RATES, PHILADELPHIA AND COMPARABLE DISTRICTS FY 1956-57 to FY 1962-63

Fiscal Year	Philadelphia	Comparable Districts
1956-57	$280.91	$283.73
1957-58	279.91	289.41
1958-59	289.13	289.36
1959-60	286.06	300.53
1960-61	316.50	320.30
1961-62	310.25	321.65
1962-63	321.61	350.79

Note: For purposes of P.L. 874 entitlement, LCR's are applicable to the second preceding year from those given here.

Sources: U.S. Office of Education. Department of Public Instruction, Commonwealth of Pennsylvania. School District of Philadelphia.

Inclusion of Both Federal and Nonfederal ADA in LCR

The local contribution rate upon which P.L. 874 entitlements are based is derived by dividing total expenditures from local sources by total ADA (L/N). However, P.L. 874 payments are designed to cover the difference between expenditures from local sources not derived from federally connected families (L_n/N_n) and those derived from federally connected families (L_f/N_f). If all federally connected pupils were 3(a) students, the LCR should equal L/N_n, not L/N. The inclusion of both federal and nonfederal ADA (whose contribution rates are much different) in calculating the LCR applicable to P.L. 874 entitlements, is another source of disparity between F_e and F.

In the public schools of Philadelphia for the year 1962-63:

L/N = $322.68

L_n/N_n = 333.14

L_f/N_f = 167.07

LCR = 320.30

From these data it is apparent that differences between L/N, L_n/N_n, and the applicable LCR are not large, even though L_n/N_n is twice the value of L_f/N_f. This is because the federal ADA (N_f) is a relatively small percentage of total ADA (N), and most federal students are 3(b) pupils. Nonetheless, the small difference between L/N and L_n/N_n amounts to $75,485; the difference between L_n/N_n and the LCR to $92,660.

Differences in ADA Used in Calculating LCR

Another factor, of minor importance, also accounts for a small part of the difference between the calculated federal payment required to create an equal rate of revenue for each child, federal and nonfederal, and actual P.L. 874 payments to the Philadelphia school district. This is the use by the Pennsylvania Department of Public Instruction of an ADA figure that differs slightly from that used by Philadelphia in establishing qualification for P.L. 874 funds. (Compare ADA used in the LCR calculation in Table P6 with that in Table P2). In its calculation of the LCR for each school district in the commonwealth,* an ADA figure is used that apparently includes tuition students. Thus, since the total ADA figure used is slightly larger than that used by the U.S. Office of Education, a slightly lower LCR results.

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* Calculation of the current cost of education in each district is based on the use of the same ADA; this has the effect of slightly lowering the state average current expense of education and thereby the national average.

$73,293,794.34/227,893 = $321.61

$73,293,794.34/227,144 = $322.68

This calculated difference of $1.07 per entitled ADA resulted in an approximate reduction of $7,990 in P.L. 874 entitlements to the Philadelphia school district in 1962-63. The figure, however, is only approximate, since Philadelphia is paid not on its own LCR but upon the average LCR of comparable districts.

Differences in Household Value between Federal and Nonfederal Families

As previously noted, the difference between the average value of residential properties for federal and nonfederal families is small, less than 1%. This results in a difference of $18,490 in the calculated value of F_e, compared with that calculated on the assumption that property values are equal. Since P.L. 874 procedures do not account for differences in residential valuation, the result is a small "overpayment" to the Philadelphia schools because of this factor.

Qualification of Pupils Because of Working Mother

Another source of overcompensation for the public schools of Philadelphia, as it is for all entitled districts, is receipt of funds for pupils who qualify because their mothers work on federal properties but whose fathers (primary earners) work on taxable nonfederal or other properties. P.L. 874 makes no distinction between primary and secondary earners, but this distinction has been made in the calculation of F_e based on the assumption that 5% of the 3(b)2 pupils in Philadelphia qualify because of secondary earners (working mothers). For Philadelphia, this factor resulted in an "overpayment" of $239,264 in 1962-63.

Additional Costs Associated with Federally Connected Pupils

The costs of surveying more than 227,000 pupils twice each year, of compiling attendance records of federally connected pupils, of tabulating data necessary to establish entitlement, and of other operations incident to the P.L. 874 program are substantial.* (See section V, Problems of Financing Public Education in Philadelphia.) All of these costs are allocable to federally connected pupils but none are reimbursable under present P.L. 874 procedures. These administrative costs, estimated at approximately $1.00 per ADA, or $227,144, were included as part of the F_e calculation, however, and as noted previously accounted for most of the difference between F_e and F.

In addition to administrative costs, costs of educating federally connected pupils are higher than corresponding costs of educating nonfederal pupils because of differences in age and type of school attended. Table P9 gives the percentage of federal and nonfederal pupils in attendance on different grade levels and different types of high schools; it also gives an index of costs associated with these different types and levels of schools. Based on these data, the cost differential for all federal pupils in 1962-63 was estimated at $9.92 per ADA more than for nonfederal pupils, or a total of $141,955. This sum, not balanced by other factors, is also of considerable importance in explaining the difference between F_e and F.

Comparison of P.L. 874 Entitlement and In-lieu Taxes on Federal Properties

Data compiled by the Philadelphia Assessor's office indicates that some 192 federal properties within the city were assessed at a total of $206,602,600 as of January 25, 1965. Included are post offices and other federal properties which do not qualify for entitlement of persons working there under P.L. 874. If these are excluded, it is estimated that the assessed value of qualifying federal properties is $188,600,000.

It is believed that the assessed valuation of many federal properties has not changed substantially for many years. Although each property is reassessed each year, many of the properties have not been visited for a substantial number of years and the valuation placed on some has not been altered for several decades. For these reasons, only rough estimates of in-lieu taxes on federal properties are possible, and tend to be quite conservative. If a 16 mill tax (1962 rate) on $188.6 million were calculated, however, it would produce about $3 million, which is about 25% more than the Philadelphia Public Schools received from the P.L. 874 program.

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* A survey of the New York City schools has never been accomplished because of its high cost to the school district--estimated at $1 million.

Table P9

PERCENTAGE OF FEDERAL AND NONFEDERAL PUPILS AND COST INDEX
BY TYPE OF SCHOOL
SCHOOL DISTRICT OF PHILADELPHIA
1964

Type of School	Federal	Nonfederal	Cost Index
Kindergarten*	7.4%	7.7%	0.5
Elementary*	49.6	52.3	1.0
Junior High School	18.3	18.7	1.3
Senior High School	22.7	19.2	1.7
Vocational High School	2.0	2.1	2.3
Total	100.0%	100.0%	

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* Percentage distribution between kindergarten and elementary (grades 1-6) estimated from K-6 data.

Source: School District of Philadelphia.

III THE INFLUENCE OF FEDERAL CONNECTION UPON PHILADELPHIA'S LOCAL EDUCATION AND FISCAL EFFORT

Expenditure of P.L. 874 Funds

A major proportion of the federal funds received by the School District of Philadelphia during its six years of entitlement have been expended for the purchase of capital equipment used in the instructional program. When P.L. 874 funds were first received in 1959, they were in excess of budgeted funds and, partially due to this situation and partially because of the uncertainty of receiving federal monies the following year, it was decided to utilize the money to purchase instructional items and equipment that could be used by the schools for several years.

In 1960, estimated P.L. 874 revenues were not included in the current operating budget, and, when received, were again used to purchase instructional materials and other equipment. The receipt of federal funds in 1960, however, released local funds for other uses and, as a result, a substantial salary increase was given that year to the teaching staff.

Since 1960, estimates of P.L. 874 receipts have been included in the operating budget of the school district. In 1961 and 1962, federal funds were expended largely for equipment as in earlier years; in 1963 and 1964, however, they were expended to meet the general obligations of the school district rather than for any particular purpose.

Although P.L. 874 receipts have been a minor source of revenue for the Philadelphia schools (see Table P5 and Chart P1), representing only about 2% of operating funds, they have been important both in increasing the effectiveness of the school program through purchase of instructional items and equipment and in raising salary levels. Some relatively expensive instructional equipment, such as electronic recording and sound reproduction equipment for use in language laboratories and machinery for vocational training might not have been purchased had not P.L. 874 funds been available.

Since 1959, science enrollments in senior high schools (Table P10) have increased significantly, and a greater number and percentage of graduates are seeking higher learning after high school graduation. (See Table P11.) A direct causal relationship between these significant trends

Table P10

SCIENCE ENROLLMENTS IN SENIOR HIGH SCHOOLS IN PHILADELPHIA
1953-54 to 1964-65

School Year	Biology	Chemistry	Physics	Physical Science
1953-54	7,366	3,251	2,118	1,835
1954-55	7,266	3,122	1,843	1,808
1955-56	7,353	3,178	1,793	2,230
1956-57	6,975	3,234	1,821	1,544
1957-58	8,903	4,098	2,139	1,218
1958-59	10,421	5,005	2,941	1,376
1959-60	14,047	6,705	3,383	1,257
1960-61	14,688	4,600	2,754	1,791
1961-62	13,500	4,103	2,280	1,202
1962-63	21,287	5,408	2,732	1,820
1963-64	18,093	7,711	3,429	3,365
1964-65	17,283	6,485	4,620	3,246

Source: School District of Philadelphia.

Table P11

NUMBER AND PERCENTAGE OF HIGH SCHOOL GRADUATES CONTINUING IN SCHOOLS OF HIGHER LEARNING
SCHOOL DISTRICT OF PHILADELPHIA
1951-52 to 1963-64

Year	Number of Graduates from Grade 12	Number of Graduates Continuing Education	Percent of Graduates Continuing Education
1951-52	8,827	2,936	33.3%
1952-53	8,524	2,946	34.6
1953-54	8,284	2,998	36.2
1954-55	8,442	3,181	37.7
1955-56	8,653	3,551	41.0
1956-57	8,487	3,328	39.2
1957-58	7,908	3,344	42.3
1958-59	8,266	3,667	44.4
1959-60	9,004	3,629	40.3
1960-61	10,515	4,801	45.6
1961-62	10,618	4,969	46.8
1962-63	8,446	4,227	50.
1963-64	10,780	5,822	54.

Source: School District of Philadelphia.

and the receipt of P.L. 874 funds cannot be shown, but it is probable that equipment purchases and other uses of the federal funds received helped to increase the trends.

Local Effort and Federally Connected Students in the Philadelphia Schools

Relative to Pennsylvania, the local effort to support the public schools is greater in Philadelphia. The percentage of total revenues received from local sources is significantly higher, and local revenues per ADA were about 20% higher in 1962, although they have been declining steadily, relative to Pennsylvania, since 1951. (See Chart P2.)

Table P12 shows the tax rate from which local revenues are raised. It is apparent that tax increases have not been significant during the past decade. However, the Board of Public Education of Philadelphia is not empowered by law to levy or collect taxes. Until 1964, the tax rates applicable to the Philadelphia public schools were set by the state legislature, and Philadelphia is currently empowered only to increase the real property tax rate by not more than 2 mills. Thus local effort largely depends upon the educational policies of the commonwealth; state aid is extremely important, and the receipt of federal aid by Philadelphia seems to have had no influence upon local effort.

Both the percentage of federally connected pupils and the percentage of total school operating revenues from the P.L. 874 program are small, the former about 6%, the latter about 2%. Moreover, neither has changed appreciably during the period of federal entitlement (1959-64), and neither can be directly related to changes in local effort.

Probable Effects of Withdrawal of P.L. 874 Funds from Philadelphia

Because of its socioeconomic characteristics, Philadelphia is likely to receive substantially more federal funds from the Elementary and Seconday School Education Act of 1965 than it has received from the P.L. 874 program. In January 1965, the school district developed a $7.1 million program (excluding capital costs) to establish a full day summer school for children of depressed areas, a series of tutorial centers, Saturday morning special opportunity classes, pre-kindergarten classes, remedial education, and day camps, and to extend its educational improvement program. These programs if established and extended should help to reduce the percentage of low achieving pupils; continued increases in state aid

Table P12

TAX RATES, SCHOOL DISTRICT OF PHILADELPHIA
1954-1964
(Mills)

Year	Real Property	Personal Property	General Business
1954	13¼	4	1
1955	13¼	4	1
1956	13¼	4	1
1957	13¼	4	1
1958	14	4	1
1959	14	4	1
1960	16	4	1
1961	16	4	1
1962	16	4	1
1963	16	4	1
1964	18	4	1

Source: School District of Philadelphia.

will probably also be forthcoming.* However, even with increases in both state aid and other federal aid programs, continued increases in local and other revenues also seem necessary. A major educational survey of the Philadelphia public schools recently recommended substantially higher expenditures to "make possible the improvements now obviously needed" in the school system.† The withdrawal of approximately $2.5 million in P.L. 874 funds would be felt by the schools even though this amount is but 2% of total revenues.

P.L. 874 receipts are currently approximately equal to receipts from a half mill levy on real property. It is not known whether a compensatory increase in property taxes would result if P.L. 874 funds were withdrawn. Neither is it possible to conclude that any particular educational program would be cut or curtailed if funds were withdrawn, since federal funds are now utilized for general expenses of the school district.

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* Special Education and Fiscal Requirements of Urban School Districts in Pennsylvania, A research inquiry: The impact of social and economic conditions on urban education and state fiscal policy. (Government Consulting Service, Fels Institute of Local and State Government, University of Pennsylvania, 1964.)

† William R. Odell and others, Educational Survey Report for the Philadelphia Board of Public Education. (The Board of Public Education, School District of Philadelphia, February 1, 1965), esp. pp. 384-389.

IV P.L. 815 AS APPLICABLE TO PHILADELPHIA

The School District of Philadelphia has not been able to qualify under the P.L. 815 program because its increases in federally connected ADA have been small (Table P2). Between the 1958-59 and 1959-60 school years, Philadelphia's increase in federally connected ADA was the largest in its experience, but even in that year the increase represented less than one-half of 1% of total ADA. Given its substantial size, an increase in federally connected ADA more than 10 times as great would have to be experienced to allow Philadelphia to qualify for P.L. 815 entitlement.

As indicated in the previous section, Philadelphia has utilized much of its P.L. 874 revenue on capital purchases. However, legal opinion in the Office of Education has held that the P.L. 874 and 815 programs are complementary and that such expenditures are within the intent of the laws.

V PROBLEMS OF FINANCING PUBLIC EDUCATION IN PHILADELPHIA

Method and Expense of Qualification

The question of Philadelphia's presumed ability (and that of other large school districts) to absorb greater numbers of federally connected students is currently reflected in the differential eligibility requirement. Although the school district meets the stringent 6% requirement and thereby receives P.L. 874 funds for its entire federally connected ADA, it scarcely does so, and at relatively great expense. The basis for the differential eligibility requirement for large districts has frequently been questioned. The relative ability of the School District of Philadelphia vis-a-vis small school districts (under 35,000 ADA) in Pennsylvania to support current costs of education will be examined in subsequent paragraphs of this section.

Philadelphia's eligibility to receive P.L. 874 funds is established on the basis of data gathered in twice-yearly surveys of the entire membership of the public school system. Although Philadelphia is a relatively stable area in terms of total numbers of pupils enrolled in the schools, experience with pupil surveys has shown that approximately 40% of the families with children in the Philadelphia schools move during the school year, i.e., between the time of the first and second surveys.* The large numbers of pupils to be surveyed and the procedures necessary to account for such large numbers of children moving from school to school make qualification under the P.L. 874 program costly in terms of staff time and salaries of personnel (both school and central office) required to conduct the surveys and account for each student during the school year.

Another expense incident to qualification is the difficulty experienced in Philadelphia of accounting for certain types of workers, notably longshoremen working on federal docks. These workers are employed on a daily basis, some days on government docks and some days on other docks. Moreover, they usually do not know very far in advance which dock they will be working on and do not keep records individually as to the number of days or percentage of days employed on federal property. Consequently, an elaborate accounting procedure and full cooperation from union hiring halls and record-keeping officials are necessary to establish federal connection in the case of these workers and their children enrolled in the public schools. But because the school district is so near the 6% threshold that it could not qualify for P.L. 874 entitlement without counting the children of men working on the federal docks, these costly procedures are necessary.

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* One survey is conducted during the first 45 days of the school year, the second during the last 45 days as required by regulation.

The accounting for children of longshoremen on a daily basis makes the use of an averaging procedure (federal ADA as of first survey + federal ADA as of second survey ÷ 2 = federal ADA for P.L. 874 purposes) impossible. Therefore, detailed attendance records are necessarily kept for each federally connected pupil so that an accurate yearly ADA figure is derived. This procedure further adds to the cost of qualification.

It is believed that the per pupil cost of qualifying for P.L. 874 entitlement equal to 10% of total entitlement is probably significantly higher in Philadelphia than in most of the smaller districts in Pennsylvania. Any economies of scale that might be gained through surveying large numbers of pupils are probably overbalanced by other relatively costly procedures necessary to establish qualification under the 6% rule.

Financial Ability of Philadelphia Relative to Other School Districts in Pennsylvania

Table P13 shows the per pupil equalized assessed valuation for Philadelphia and Pennsylvania for the period 1958-62. As of 1962, the assessed valuation per pupil was about 38% higher in Philadelphia than in Pennsylvania. However, valuation per pupil has been declining in Philadelphia in recent years, whereas in Pennsylvania it has remained approximately the same. Other data, compiled by the U.S. Bureau of the Census, suggest that the market value of real property per ADA, while higher in Philadelphia than in most of the other areas of Pennsylvania, is not as high as in some suburban counties (i.e., Delaware and Montgomery counties) where school districts do not fall under the 6% rule (Table P14).

One of the principal reasons that assessed valuation per ADA is higher in Philadelphia than in many other areas throughout the commonwealth is the comparably greater percentage of industrial and commercial property in that city; these areas, as well as most farm acreage, vacant, and other nonresidential properties, add considerable value to the taxable base of a school district without making commensurate demands for

Table P13

EQUALIZED ASSESSED VALUATION PER PUPIL
PHILADELPHIA AND PENNSYLVANIA
1958-1962

Year	Philadelphia	Pennsylvania
1958	$24,639	$17,005
1959	24,432	16,937
1960	24,135	17,187
1961	24,105	17,235
1962	23,736	17,186
Percent change 1958-62	-3.7%	1.1%

Source: Research Council of the Great Cities Program for School Improvement.

Table P14

MARKET VALUE PER ADA, COMMERCIAL AND INDUSTRIAL VALUATION AS A PERCENT OF TOTAL VALUATION, AND PERCENT OF ELEMENTARY STUDENTS IN PRIVATE SCHOOLS PHILADELPHIA, PITTSBURGH, AND SELECTED PENNSYLVANIA COUNTIES 1961

County	Market Value per ADA	Percent Industrial and Commercial	Percent in Private Schools (1960)
Adams	$19,400	17.6%	23.9%
Allegheny	34,600	34.0	36.1
Pittsburgh	44,200	45.9	45.9
Beaver	22,600	36.1	17.1
Berks	18,700	17.0	11.0
Blair	14,400	17.9	17.3
Bucks	25,400	22.7	29.4
Butler	23,000	23.1	12.5
Cambria	17,300	23.0	24.1
Chester	26,300	16.0	17.2
Crawford	15,100	19.4	6.3
Cumberland	18,100	17.1	9.4
Dauphin	20,800	27.6	16.8
Delaware	34,400	21.3	41.9
Erie	22,300	32.6	28.2
Franklin	17,100	14.3	3.2
Indiana	11,900	25.6	6.2
Lackawanna	25,900	29.5	28.7
Lancaster	19,000	22.5	10.8
Lawrence	18,900	25.3	12.7
Lebanon	18,400	24.2	11.6
Lehigh	25,300	20.8	21.6
Luzerne	18,900	27.9	25.6
Montgomery	33,900	19.4	31.5
Northampton	21,000	33.0	19.6
Philadelphia	26,900	36.7	39.3
Somerset	11,500	8.3	2.3
Washington	22,300	32.3	11.2
Westmoreland	20,900	29.2	17.9
York	20,800	23.4	8.5

Sources: U.S. Census of Governments, 1962. Statistical Report of the Superintendent of Public Instruction, School year ending July 2, 1961. U.S. Census of Population, 1960. Stanford Research Institute.

educational services. Another reason for the relatively higher assessable wealth per ADA in Philadelphia is the large percentage of pupils in private schools. The assessable value of residential properties associated with these students also adds to the tax base, while demands for public educational services are small. (See Table P14.)

While the assessable valuation of real estate is a widely used and generally acceptable index of financial ability, its use for this purpose must be modified by a consideration of other factors. Foremost among these are: (1) competing demands of other government agencies for revenue derived from the same tax base, (2) differential access to revenues from sources other than assessable real property, and (3) limitations upon the access to revenue derived from local sources.

Table P15 shows the median tax revenues per $100 market value of taxable real property for Philadelphia and selected school districts, by type of district, for the year 1962. Also shown are school district revenues and the percent of total tax revenues received by the school district. From these data, it is apparent that the combined school and municipal (total) tax burden is much higher in urban school districts, and particularly in Philadelphia and Pittsburgh, which fall under the 6% rule, than in other types of districts.

A smaller differential exists among districts in regard to school revenue. Especially significant is the fact that some 70% of the revenues derived from local property taxes in Philadelphia and Pittsburgh are utilized by local government agencies other than the public schools, whereas in suburban first class townships, 70% of the revenues are utilized by the schools. The differentially heavy demands on the local property tax base by municipal and other nonschool agencies in Philadelphia (and Pittsburgh) considerably reduce the available revenues from this source and reduce the validity of assessed valuation as a true measure of fiscal ability. If assessed valuation were reduced by a percentage equal to the demands by nonschool agencies, the result would be an index number that would be lower in Philadelphia than in all other types of districts except rural boroughs and second class townships.

Local ability is also considerably modified by the availability of revenues other than those from taxable real properties. In FY 1962, all school districts in Pennsylvania (including Philadelphia) received revenues from other local sources (i.e., per capita taxes, in-lieu taxes, personal property and business taxes, mercantile taxes, payroll taxes, and others under Pennsylvania Act 481) equal to 25.8% of revenues received from real estate taxes; Philadelphia, in the same year, received an amount

Table P15

MEDIAN TAX REVENUES PER $100 MARKET VALUE OF TAXABLE REAL PROPERTY, TOTAL AND SCHOOL DISTRICT, PHILADELPHIA AND SELECTED OTHER PENNSYLVANIA SCHOOL DISTRICTS

1962

Type of School District	Total Revenues	School District Revenues	Percent of Total to School District
Urban	$3.32	$1.52	49%
Philadelphia	4.38	1.31	30
Pittsburgh	3.89	1.18	30
Surburban Boroughs	2.75	1.64	61
Rural Boroughs	2.78	1.61	59
Suburban First Class Townships	2.41	1.62	70
Rural First Class Townships	2.32	1.63	66
Suburban Second Class Townships	2.44	1.82	71
Rural Second Class Townships	2.56	1.84	73
Coal Region Districts	2.47	1.25	61

Source: Fels Institute of Local and State Government, Special Education and Fiscal Requirements of Urban School Districts in Pennsylvania, 1964.

equal to 17.0% of its real estate tax revenues.* In FY 1962, state appropriations to all school districts in Pennsylvania (including Philadelphia) amounted to 95% of local real estate revenues, whereas state appropriations for the public schools of Philadelphia amounted to 54% of local real estate revenues. In comparison with other school districts in the commonwealth, Philadelphia's ability to finance education is considerably reduced by its comparatively limited access to local sources of revenue other than levies on real property and on state appropriations for education.

Philadelphia is also more heavily dependent upon the state legislature than most of the other Pennsylvania school districts in its ability to raise revenues from local sources. Philadelphia's personal property and general business tax rates are established by legislative act, and tax rates on real property have, until recently, also been the subject of state legislative action rather than local action. Currently, the city of Philadelphia has only limited power to increase the school tax rate (2 mills).

In Pennsylvania, the 6% rule, based on ADA of 35,000 in FY 1939, does not seem to be an adequate current measure of fiscal ability. While assessed valuation per pupil is generally high in Philadelphia and Pittsburgh--the two districts within the state that fall under the 6% rule--valuation in some other districts exceeds that of Philadelphia. Moreover, because of competing demands of other local government agencies on local assessable real properties and because of relatively restricted revenues available from other sources, Philadelphia's ability to finance education is substantially reduced to a point where it is below many if not most of the other school districts within the commonwealth.

Comparative Costs of Education in Philadelphia

The current costs of education per ADA are about 8% higher in Philadelphia than the state average. (See Chart P2.) This situation exists in spite of the fact that in Philadelphia 39.8% of the ADA consists of high school students, compared with 42.6% for Pennsylvania (FY 1962 data). Available information suggests that if the distribution of pupils by grade level were the same in Philadelphia as for the state as a whole, costs in Philadelphia would be relatively even higher.

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* Derived from Table 26, Statistical Report of the Superintendent of Public Instruction, School year ending July 1, 1962.

Table P16 shows the percent of total expenditures within Pennsylvania accounted for by the Philadelphia schools for FY 1962. Also shown are the percent expended by major category and selected subcategories. In that fiscal year, Philadelphia with 11.9% of the total ADA expended 12.7% of the total funds for educational services.* Expenses for debt service, general control (administration), and auxiliary services were lower than the average; expenditures in all other categories were higher. In nearly all categories, wages and salaries were higher than the average. Particularly significant were large expenditures for capital outlay and maintenance of buildings. The relatively higher costs of education in Philadelphia relative to smaller districts in Pennsylvania reduces the city's position to support education and makes questionable the use of an ADA figure (in the P.L. 874 and 815 programs) to distinguish between districts of greater and lesser financial ability.

Differential Demands for Education in Philadelphia

The relatively low median income, high percentage of nonwhite population, and fewer years of schooling completed by persons over age 25 in Philadelphia have previously been noted (see Table P1); the frequency with which parents of Philadelphia school children change housing accommodations has also been noted. In a recent study of special education and fiscal requirements of urban school districts in Pennsylvania, these factors have been found to correlate most highly with low student achievement.† More than 40% of the sixth grade pupils in the Philadelphia schools tested more than half a grade below national achievement norms, and over 40% of all low achieving pupils in Pennsylvania were in Philadelphia.‡ These conditions underline socioeconomic conditions that have great significance for the schools, and long and costly programs will be necessary to raise achievement levels.

Table P17 shows the percentage of all Pennsylvania students enrolled in vocational education in the Philadelphia schools. Significantly, demands for this type of education are much higher in Philadelphia and other large cities than in most school districts. In Philadelphia, the

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* Data in Table P16 include expenditures for debt service and capital outlay; data in Chart P2 exclude them.

† See especially Table 10, p. 23, Part III, Special Education and Fiscal Requirements of Urban School Districts in Pennsylvania, Fels Institute of Local and State Government, University of Pennsylvania, 1964.

‡ *Ibid.*, Table 1, p. 9, Part I.

Table P16

EXPENSES OF PHILADELPHIA SCHOOLS AS PERCENT OF EXPENSES FOR ALL SCHOOLS IN PENNSYLVANIA FY 1962

Expense Category	Percent
General control	9.3%
Instruction	12.9
Salaries of supervisors (15.2%)	
Expenses of supervisors (44.2%)	
Salaries of clerks (21.3%)	
Salaries of principals (12.1%)	
Salaries of teachers (13.4%)	
Textbooks (12.5%)	
Other (50.2%)	
Auxiliary agencies and coordinate activities	10.3
Operation	13.8
Wages and salaries (16.5%)	
Maintenance	18.8
Repair of buildings (30.7%)	
Fixed charges	13.6
Insurance (other than fire and comprehensive) (31.5%)	
Debt service	7.1
Capital outlay	26.3
Erection of new buildings (60.7%)	
Total	12.7%
Average daily attendance	11.9%

Source: Statistical Report of the Superintendent of Public Instruction, School year ending July 1, 1962.

cost of maintaining a student in a vocational-technical high school is about 35% higher than for a student in an academic high school because of the added cost of instructional equipment, smaller class sizes, and related factors. In addition, many students enrolled in other than vocational schools take courses in vocational subjects, the cost of which is difficult to estimate.

Table P17

VOCATIONAL EDUCATION, PERCENT OF PENNSYLVANIA PUPILS IN PHILADELPHIA SCHOOLS
FY 1962

Type of Education	Percent in Philadelphia Schools: All Day	Percent in Philadelphia Schools: Part Time and Evening
Agriculture	--	--
Distributive Education	41.5%	4.0%
Home Economics	0.6	39.4
Industrial	24.6	27.7
Total	20.2	

Source: Statistical Report of the Superintendent of Public Instruction, School year ending July 1, 1962.

In addition to vocational education, the School District of Philadelphia provides a large number and variety of other educational services and programs designed to meet the special needs of its pupils. Among these are an Educational Improvement Program (EIP), child care centers, Great Cities School Improvement Program, summer playgrounds, homemaking consultant program, summer music program, driver education, and intergroup education activities. The FY 1965 school budget also recommended the establishment of summer school programs, increase in psychological services, increase in books and facilities for libraries, after-school remedial and tutorial centers, a cooperative teacher training program to improve the quality of teaching in "inner-city" schools, pre-kindergarten classes, expansion of counseling programs, increase in facilities for emotionally disturbed children, an intensive remedial reading program for high school students, expansion of school-work program, expansion of motivational and cultural enrichment programs, a parent child nursery project, improvement of substitute teaching services, experimental nursery classes, and a speech development program. Although the budgets for many of these special programs are comparatively small, and some (e.g., the school-work program and pre-kindergarten program) are expected to be financed with federal or other funds, the wide variety and expense of educational services necessary to meet the special needs of children from a socioeconomic milieu which has produced an unusually high percentage of low achieving pupils is apparent.

The Educational Improvement Program (EIP) is one of the first extensive programs specifically designed to raise the achievement level of large numbers of pupils. Begun in 1963 with a budget of $214,000, its 1965 cost is already $2,276,000. The Great Cities School Improvement Program is a special program designed to: "raise achievement levels, raise aspirational levels, discover latent talent and abilities, and awaken community responsibility through fostering closer ties between home and school" in the heart of an area of the city marked for urban renewal. The program includes remedial, tutorial, and enrichment programs as well as homework centers where parents and children may work cooperatively. These and similar compensatory services have been made necessary by socioeconomic conditions that have grown increasingly acute during the past decade and a half that P.L. 874 and 815 have been in existence. The cost of these types of services is one of the reasons for mounting expenditures in large city school districts, and further underlines the difficulty of sustaining a differential qualification level for school districts of greater and lesser ability based on size alone.

Justification for the 6% Rule in Philadelphia

Although the School District of Philadelphia is more than three times as large as the next largest district in Pennsylvania and many times larger than the districts that do not fall under the 6% rule, its financial abilities are not correspondingly greater than other districts. Other districts, much smaller in size, have greater assessable real property values, have fewer demands on local taxable wealth by other government agencies, receive a greater share of their revenues from sources other than taxes on local real estate, receive a greater percentage of state aid funds, and have fewer demands for costly special educational programs. Considering all these factors and generally higher educational costs in Philadelphia than in the average school district in Pennsylvania, it is not possible to justify a 3% qualification differential between Philadelphia and other districts within the state that had fewer than 35,000 ADA in FY 1939. Size alone, especially as measured from a given prewar date, does not sufficiently distinguish between districts of greater and lesser abilities or needs for P.L. 874 and 815 funds. A rather complex formula based on a consideration of many factors other than size would have to be developed before distinctions between districts could be equitably made on the basis of financial abilities.

VI SUMMARY AND CONCLUSIONS

Except for the additional costs to the district of qualifying for P.L. 874 entitlements and the differential costs of educating federal pupils (a greater percentage of whom are in high schools where costs are higher) federal funds received by the School District of Philadelphia approximately equal the burden placed on the district as the result of federal activities in the area. This condition of relative equality exists because (1) the local tax base is extremely close to the 50:50 industrial-residential ratio assumed by P.L. 874; (2) the average value of residential housing is very nearly equal for federal and nonfederal families; and (3) the local burden of educating federally connected students is approximately that of the LCR for comparable districts in the second preceding year. Except for the additional costs due to the differing grade distribution of federal and nonfederal students and the financial burden of qualifying for the receipt of federal funds, the various factors tend to balance each other. The School District of Philadelphia received P.L. 874 entitlements of approximately $2,431,000 for the 1962-63 school year; the calculated burden for that year was approximately $2,743,000.

Partially because of the heavy financial burden to the district in qualifying for P.L. 874 entitlement, Philadelphia did not establish eligibility until the 1958 amendments to P.L. 874 had abrogated the 3% absorption requirement for large districts. The percentage of federally connected pupils currently in the public schools is less than 7%, and Philadelphia qualifies under the 6% eligibility requirement only because it can establish federal connection for children of federal dock workers by complicated and costly accounting procedures.

A major proportion of the federal funds received by the school district during its six years of entitlement have been expended for capital equipment used in the instructional program. Because of the uncertainty of receiving additional funds in future years, the district decided to utilize the funds received in 1959 and 1960 for purchases of a nonrecurring nature. The receipt of federal funds in 1960, however, released local funds for other uses and, as a result, a substantial salary increase was given that year to the teaching staff. During recent years, P.L. 874 funds have become part of general operating revenues and have been expended to meet the general obligations of the district rather than for any particular purpose.

Since P.L. 874 entitlements constitute only about 2% of total operating revenues of the Philadelphia public schools, it is difficult to determine whether the receipt of federal funds has had any significant impact upon local effort to support education. Much more important are state educational policies which determine the amount of state aid paid to Philadelphia (currently approximately $40 million vs $2.3 million in federal funds) and the rates and sources from which local tax funds may be derived.

Although the School District of Philadelphia is much larger than any other district in Pennsylvania, its financial abilities to absorb federally connected students are not commensurately large. Some smaller districts have greater assessable real property values per ADA, have fewer demands on available tax revenues by competing local government agencies, receive a greater share of revenues from state aid funds and other sources, and have fewer demands for costly special educational programs. Because Philadelphia has 40% of the low achieving pupils with but 12% of the total ADA in Pennsylvania, many special compensatory, vocational, and other programs are necessary. The cost of but one of these programs--the Educational Improvement Program--is currently (1965) approximately equal to P.L. 874 receipts. For these reasons, it is difficult to justify the continuation of the 6% eligibility requirement for Philadelphia. The 35,000 ADA figure as of FY 1939 does not equitably divide large districts with presumed greater abilities to support education from small districts with lesser abilities. Many financial, socioeconomic, and other factors are extremely important in measuring a school district's ability to provide education for federally connected pupils; size alone does not justify the current differential eligibility requirement between Philadelphia (and Pittsburgh) and other districts in Pennsylvania.

Because increases in federally connected ADA have been relatively small (1,600 of the total increase in ADA of 23,000 between the 1958-59 and the 1963-64 school years), Philadelphia has not been eligible to receive P.L. 815 assistance. Given its substantial size, an increase in federally connected ADA more than 10 times as great as the largest in its recent experience would have to be experienced to allow Philadelphia to qualify to receive federal construction aid under present P.L. 815 formulas.

A STUDY OF
THE OPERATION OF PUBLIC LAWS 874 AND 815
IN SALINA, KANSAS

By: David A. Curry

I INTRODUCTION

Background

Salina, Kansas, with a population of about 45,000, is the fourth largest city in the state, and the major trading and manufacturing community of central-west Kansas. It is the chief wholesale distribution point for central and northwest Kansas, and the county seat for Saline County.

During World War II, Smoky Hill Army Air Field (later Smoky Hill Air Force Base) was constructed immediately southwest of Salina, as a training center for B-17 and B-29 bombers. Activity at the base declined in the late 1940's, and in April, 1950, the base was inactivated. It was reactivated on a modest scale in 1951 due to the Korean conflict, but the real post-World War II impact of the base on Salina began with the assignment of two wings of the Strategic Air Command in 1952. These wings required a permanent base staff of about 7,000 officers, airmen, and civilians through 1959, and about 6,400 from 1960 through 1963. In 1957, the base was renamed Schilling Air Force Base; it will be referred to as Schilling AFB throughout the study.

The population of Salina had declined in 1951 to 25,500 from about 26,200 in 1950. The impact of some 7,000 AFB personnel and their families on a town of this size and on its schools was therefore very great, and constitutes the chief reason for inclusion of Salina as a case study of P.L. 874. Other reasons for its selection are: the suddenness of the impact, the confinement of the impact very largely to the city of Salina, the likelihood that Salina would be representative of a large number of SAFA districts entitled by reason of a nearby military installation, and the fact that Schilling AFB is being virtually closed down in early 1965. Thus it provides an opportunity in future years to see what effect the closing of the base and the termination of P.L. 874 payments will have on the town and the ability of its school system to finance the cost of education.

Salina high and elementary schools are administered by the Salina Board of Education. One high school, 2 junior highs, and 17 elementary schools were administered by the Board in 1964, many of which were recently constructed or expanded. There is no public junior college. Though at some points the Board of Education boundaries extend beyond those of the city, the Board and the city are generally coterminous and may be treated as coterminous for statistical purposes such as population and median income trends. The assessed valuation of the city usually averages about 98% of that for the Board of Education.

Salina School, Population, and Economic Growth

Chart S1 shows the rapid growth of Salina population, school ADA, and Schilling AFB employment. The increased growth rate of 3(b) ADA in FY 61 and FY 62 was due to the temporary presence of a large number of families of the construction contractors of ICBM missile silos near Salina, under the management of Schilling AFB.

Note that the growth of Salina population and school enrollment was not as abrupt as the growth of the AFB, which expanded to full size from nearly zero in one year. This is partly because Schilling personnel only gradually brought their wives and children to the areas, as new housing was constructed in town and 735 housing units for AFB families were completed at the Air Force Base. The acceleration in the 3(a) growth rate due to availability of the base housing (beginning in 1958) is evident from Chart S1. Before 1958, some 240 refurbished housing units were used by AFB personnel at Camp Phillips; located a few miles outside the Salina Board of Education boundaries but still served by the Board.

After the initial population decline in 1951, growth in population for Salina greatly exceeded Kansas state and national averages. Table S1 shows a comparison of selected population and economic data for the town over the decade 1950-60 with state and national data. Brief comments on Table S1 follow the table.

Economic Impact of Schilling AFB

The changes in Salina employment from 1950 to 1960 are given in Table S2 by industry group, in descending order of relative percentage growth. It seems reasonable to conclude that the groups listed through item h (retail trade) have been appreciably influenced by the presence of Schilling AFB. The remaining groups--manufacturing, business and repair services, wholesale trade, transportation and public utilities, and agriculture--all show growth rates considerably below the average of 40.9%, and may therefore be presumed to be less affected by the presence of the AFB.

In order to explore the direct influence of the AFB on Salina in financial terms, a summary of operating costs of the base was prepared

CHART 51

GROWTH OF SALINA ADA AND POPULATION FY 1950-1963

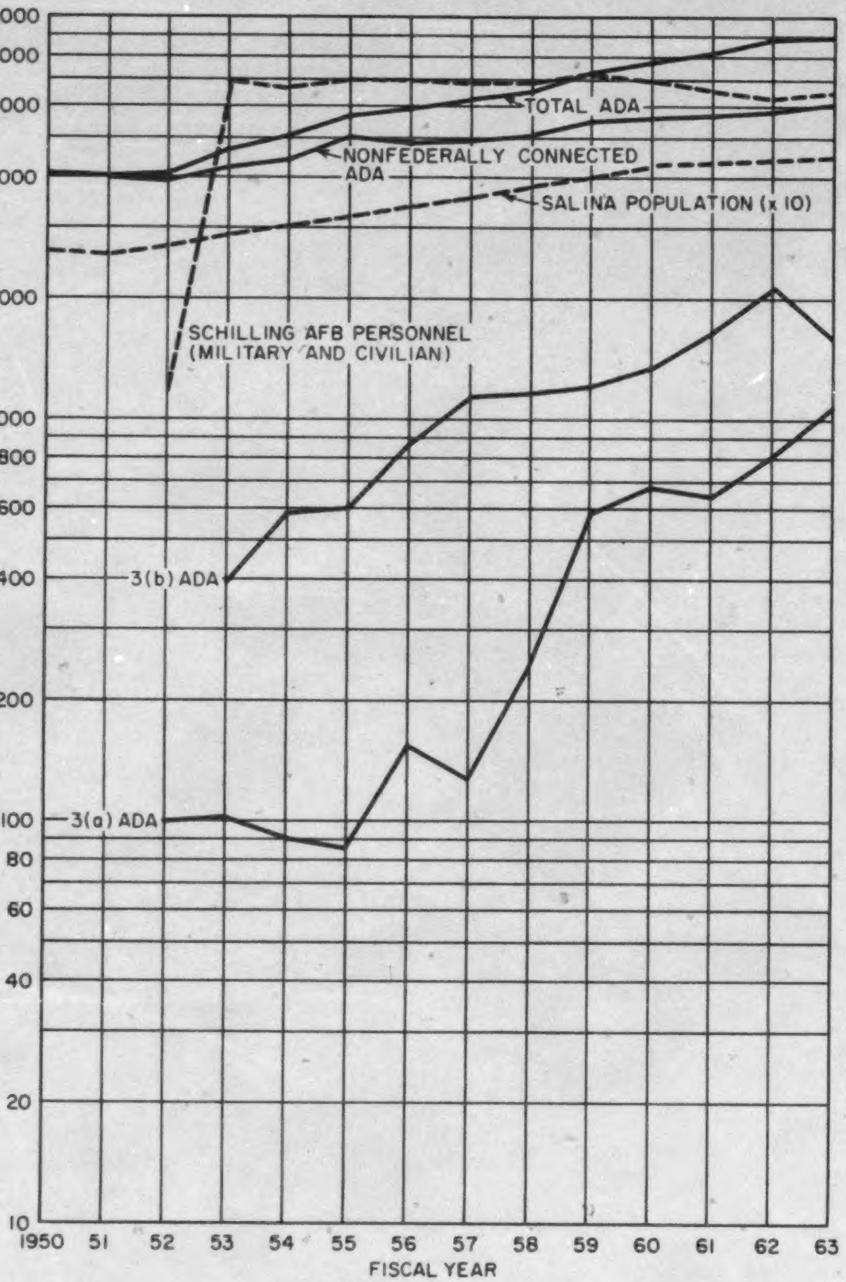

Table 81

COMPARATIVE POPULATION AND ECONOMIC DATA FOR SALINA, KANSAS, AND THE UNITED STATES 1950-1960

	1950			1960			Actual Change, 1950 to 1960			Percent Change		
	Salina	Kansas	U.S.	Salina	Kansas	U.S.	Salina	Kansas	U.S.	Salina	Kansas	U.S.
a. Urban population (000)												
1. Total	26.2	993	96,847	43.2	1,326	125,269	+17.0	+336	+28,422	+64.9%	+33.8%	+29.3%
2. Under 5 years of age	2.7	108	9,821	6.6	160	14,060	+3.9	+52	+4,239	+144.4	+48.4	+43.2
3. 20-29 years of age	4.3	171	16,200	8.0	175	15,570	+3.7	+5	-630	+86.0	+2.8	-3.9
4. 30-39 years of age	3.8	145	15,452	5.5	132	17,687	+1.7	+37	+2,235	+44.7	+25.1	+14.5
b. Median age of urban population	30.8	30.5	31.5	25.3	28.8	30.3	-5.5	-1.7	-1.2	-17.9	-5.6	-3.8
c. Median school years completed by urban persons 25 and over	12.0	11.2	10.2	12.3	12.1	11.1	+0.3	+0.9	+0.9	+2.5	+8.0	+8.8
d. Employment and income												
1. Male urban civilian labor force (000)	7.5	277.8	27,749	9.2	337.1	32,486	+1.7	+59.3	+4,737	+22.7	+21.3	+17.1
2. Female urban civilian labor force (000)	3.2	118.9	12,821	5.8	177.8	17,447	+2.6	+58.9	+4,626	+81.2	+49.5	+36.1
3. Total urban civilian labor force (000)	10.7	396.6	40,569	15.0	514.9	49,932	+4.3	+118.3	+9,363	+40.2	+29.8	+23.1
4. Total urban labor force, including armed forces (000)	10.7	400.0	41,083	18.0	529.6	50,903	+7.3	+129.6	+9,872	+68.2	+32.4	+23.9
5. Percentage unemployed in urban civilian labor force	4.1%	3.2%	4.9%	4.1%	4.1%	5.1%	--	+0.9%	+0.2%	--	+28.1	+4.1
6. Median urban family income	$3,260	$3,207	$3,481	$5,475	$5,856	$6,166	$+2,215	$+2,649	$+2,685	+67.9	+82.6	+77.1
7. Percentage of urban families with income below $2,000	21.1%	23.4%	21.2%	6.4%	9.1%	9.4%	-14.7%	-14.3%	-11.8%	-69.7	-61.1	-55.7
e. Percentage of owner-occupied housing units	60.5	63.9	55.0	56.8	68.9	61.9	-3.7	+5.0	+6.9	-6.1	+7.8	+12.5

Sources: U.S. Census of Population, 1950 and 1960. U.S. Census of Housing, 1950 and 1960.

Notes to Table S1

Lines a1 to a4. The 64.9% growth of Salina population from 1950 to 1960 was nearly double the growth rates of Kansas and U.S. urban population. Even higher Salina growth rates were experienced in the age group under 5 years and the age group between 20 and 29 years--ranges which would include a high proportion of young Air Force married couples and their children.

Lines b and c. The median age of Salina's population declined 17.9% to 25.3 years, younger by 3 to 5 years than Kansas and U.S. urban medians. Median school years completed for Salina remained slightly higher than Kansas and U.S. urban medians, though increasing at a lower rate during the decade.

Lines d1 and d2. The growth rate for the male civilian labor force was below the average Salina population growth rate, averaging only about the same as the Kansas urban civilian work force growth rate. The female work force growth rate was much higher, reflecting probably the widespread employment among both Air Force and civilian wives at the AFB, in schools, in retail trade, and so forth.

Lines d3 and d4. Although the growth rate of the total Salina civilian work force was only two-thirds that of the city's population (line d3), the addition of 3,000 members of the armed forces living in Salina in 1960 raises the total labor force to 18,000 (line d4), for a growth rate slightly in excess of the city's population growth rate and more than double the state urban average.

Lines d5 to d7. Median Salina family income (line d6) did not increase quite as rapidly in Salina as Kansas and U.S. urban medians, probably reflecting low military salaries. However, extreme poverty (as reflected by the percentage of families with incomes under $2,000, line d7) declined more in Salina than for the Kansas and U.S. urban populations. Percentage of civilian unemployment (line d5) did not change in Salina from 1950 to 1960, in spite of increases in Kansas and U.S. urban unemployment.

Line e. The percentage of owner-occupied housing units declined by 6.1% in Salina between 1950 and 1960, despite state and national increases. Undoubtedly, this reflects the decision of many temporary AFB families to rent homes or apartments rather than to buy them.

End of Notes to Table S1

Table S2

ANALYSIS OF CHANGE IN SALINA EMPLOYMENT
1950-1960

Industry Group	Total Employment 1950	Total Employment 1960	Actual Change 1950 to 1960	Percent Change
a. Private Households	266	637	+371	+139.5%
b. Educational Services	519	1,043	+524	+101.0
c. Public Administration	434	791	+357	+82.2
d. Hospitals	335	500	+165	+49.2
e. Construction	896	1,316	+420	+46.9
f. Personal Services Other Than Private Households	478	655	+177	+37.0
g. Finance, Insurance, and Real Estate	475	647	+172	+36.2
h. Retail Trade	2,644	3,495	+851	+32.2
i. Manufacturing:				
1. Machinery	104	201	+97	+93.3
2. Food and Kindred Products	623	706	+83	+13.3
3. Printing, Publishing, etc.	186	301	+115	+61.8
4. All Other	279	272	-7	-2.5
Total Manufacturing	1,192	1,480	+288	+24.2
j. Business and Repair Services	871	433	+62	+16.7
k. Wholesale Trade	736	829	+93	+12.6
l. Transportation, Communications, and Other Public Utilities	1,167	1,215	+48	+4.1
m. Agriculture	166	145	-21	-12.7
n. All Other	538	1,208	+670	+124.5
Total Employed	10,217	14,394	+4,177	+40.9%

Source: U.S. Census of Population, 1950 and 1960.

(Table S3). Since no precise data on AFB expenditures in Salina were available, the rough percentage estimates shown in the table were developed by SRI after discussions with base operating and maintenance personnel. The total of some $14.6 million in military and civilian pay estimated to be spent locally is 17% of total Salina retail sales of $85.8 million[*] in calendar year 1963. However, not all of the $14.6 million results in increased income in Salina, because of some "leaks" out of the local economy owing to purchases by merchants of supplies and services imported from other areas.

Translation of the other Schilling expenditures into economic impact can also only be approximated without a detailed industry-by-industry analysis. For example, local electric and gas utility sales were increased significantly by AFB purchases, but with practically no increase in operating personnel of the Kansas Power and Light Company. However, it may be concluded from the foregoing comments and from Table S2 that the economic effect was substantial. Nevertheless, there is no evidence that any induced employment or economic growth improved the Board of Education's tax base per nonfederally connected child, because the added employment and families stimulated by the AFB brought with them their children who attended the public schools of the city. This study of the impact of the AFB on the Salina Board of Education will therefore be confined to a consideration of the population directly connected by employment of some member of the family with Schilling AFB, including of course both families with and without children in public schools.

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[*] U.S. Census of Business, 1963.

Table S3

FY 64 OPERATING COSTS OF SCHILLING AIR FORCE BASE*
(Dollars in Thousands)

		Estimate of Expenditures in Salina	
	Total	Percent	Amount
a. Military pay	$21,206	60%	$12,724
b. Civilian pay	2,108	90	1,897
c. Supplies purchased by base	2,230	50	1,115
d. Equipment purchased by base	141	50	70
e. Transportation and travel expenses	234	20	468
f. Base maintenance	526	100	526
g. Utilities:			
1. Electricity	400	100	400
2. Gas	145	100	145
3. Communications	312	50	156
h. Other contractual services (e.g., refuse collection, motor vehicle repair, military education)	225	50	112
Total	$27,577	64	$17,613

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* Excludes the cost of centrally purchased major equipment such as missiles, aircraft, motor vehicles, and ordnance items, and about $6 million for aviation fuels and missile propellants.

Source: See text.

II COSTS AND SOURCES OF REVENUES FOR EDUCATING FEDERALLY CONNECTED PUPILS

Actual Salina Entitlement for FY 63 vs Entitlement for Intradistrict Equalization

Entitlement under P.L. 874 was first approved for Salina in FY 52 in the amount of $13,000 for 100 3(a) children living at Camp Phillips. Federal entitlements for Salina increased thereafter to a maximum of $556,800 in FY 63, the last year for which complete data were available. For comparison with the actual federal entitlement in FY 63, the value of entitlements for intradistrict equalization was computed for Salina, according to the following formula and definitions:

$$F_e = N_f L_n/N_n - L_f + Q_f$$

where:

F_e = computed value of entitlement for intradistrict equalization

N_f = number of federally connected ADA

L_n = equivalent of local property tax revenues for nonfederally connected ADA. These were estimated by subtracting the value of L_f (as defined below) from L, total school property tax revenues. L was available from school records, and was taken as the sum of revenues from Board of Education property taxes, plus levies (tax rate times assessed valuation) for the countywide school taxes that are apportioned on an ADA basis in Kansas. Payments received from a high school equalization tax levied outside the Board of Education boundaries, apportioned by Salina County on an ADA basis to all high schools in the county, were excluded.

N_n = number of nonfederally connected ADA, excluding transfer students. (An estimate of 0.9 percent × total ADA was used for transfer students, based on results from a 1963 survey by the Salina County Superintendent of Schools.)

L_f = local property tax payments by federally connected families. The value of L_f was derived by multiplying the ratio of federally connected to total assessed property valuation (V_f/V) by total school property tax revenues (L). The valuation of federally connected property (V_f) in the ratio of V_f/V was estimated from a sample of federally connected families residing in Salina (see subsection Sample for Federally Connected Property Tax Payments for further details).

Q_f = special costs and/or savings for federally connected ADA. For Salina, these were determined to consist solely of contractual costs of transporting 3(a) students from military bases to schools in town and about 2% savings in the weighted average C/ADA for federally connected students due to the somewhat lower proportion of federally connected ADA in high school. Added workload was experienced by both teachers and administrative staff of the Board of Education as a result of P.L. 874 requirements and the more rapid turnover of federally connected children, but while the added workload reduced the staff time available for teaching and other school activities, it apparently did not result in additional staff or other measurable incremental costs.

There are important similarities between the foregoing formula and P.L. 874 requirements for computing local cost rates. In particular, the term L_n/N_n is comparable to the local cost rate of P.L. 874 except that it considers only the nonfederally connected property taxes per total ADA; and L_f is comparable to the reduction of entitlement for 3(b) students due to the assumed tax contributions of 3(b) parents and other federally connected persons being in Salina but without children in public schools. The special-cost term (Q_f) is sometimes recognized administratively by the Office of Education in setting the local P.L. 874 cost rate, as it was for transportation costs of 3(a) students in Salina.

Since state aid in Kansas is apportioned on the basis of ADA rather than on the basis of equalized ability of school districts to finance education through property taxes, and since no state offset is made for funds received under P.L. 874, no adjustment was necessary in the foregoing formula due to possible "overpayments" of state aid arising from the presence of federally connected students.

Table S4 illustrates the computation of F_e for FY 63, and compares F_e (line j) with F, the actual entitlement of the Salina Board of Education (line k). Note that F is short of F_e by $39,100.

Reasons for Difference Between F and F_e

The $39,100 shortage of Salina entitlement in FY 63 may be summarized in four types of adjustments, as illustrated in the following reconciliation between F and F_e:

	(Thousands)	
Actual Salina P.L. 874 entitlement for 1962-63 (F)		$556.8
1. Deduct: entitlement for eighty-six 3(b) ADA entitled due to secondary employment of mother only (86/2 × $275.17)	-$11.8	
Entitlement adjusted for ADA difference		545.0
2. Deduct: net decrease due to $5.37 excess of 1960-61 group cost rate for Kansas first class city schools over L_n/N_n for Salina ($5.37 × 1894)	-10.2	
Entitlement adjusted to nonfederally connected current property taxes and ADA for Salina Board of Education (L_n/N_n)		534.8
3. Deduct: savings in current expenses of education from lower proportion of federally connected children in grades 9-12	-21.4	
4. Add: excess of (a) federally connected current property taxes that would be assumed by P.L. 874 for a 3(b) payment ratio of .5 ($214,600) over (b) the amount or such taxes as estimated from the sample of federally connected families in Salina ($132,200)	+82.4	

	(Thousands)	
5. Not accounted for, due to rounding of calculations	+0.1	
Federal entitlement as computed for intradistrict equalization (F_e)		$595.9
Net adjustments	+$39.1	

As indicated in Volume I of this report, the purpose of the foregoing type of adjustments is to show exactly what changes would be needed to move from F to F_e, without necessarily implying that all of the adjustments would be practicable and desirable. It is significant, however, that by far the largest adjustment (number 4, for $82,400) is caused by the too small payment ratio of .5 for 3(b) children; as shown later, the payment ratio for intradistrict equalization would have been .69 instead of .5. It is also of interest that the $5.37 net difference between the group cost rate actually used for Salina and L_n/N_n used in computing F_e (see adjustment number 2) may be derived by five separate steps, some involving sizable changes upward or downward in the intervening rates. An analysis of this type for Salina is presented in Appendix S-A.

Trends in F vs F_e for Salina

Extrapolation of the estimate of federally connected assessed valuation (V_f/V) back over the years of federal entitlement was attempted for Salina on the basis of housing construction trends and the proportion of 3(b) to total non-3(a) children in the public schools. The result enabled estimates of L_f and therefore of F_e for each year of entitlement. These estimates of F_e are compared with actual entitlements for Salina in Table S5, and adjustments necessary to reconcile F_e with F are shown. Note from the table that there has been an apparent deficiency of Salina entitlement in every year, on the basis of the criterion of intradistrict equalization. A total shortage of $668,000 over the years is involved, or some 20 percent of F_e. The last column in Table S5 shows that by far the major reason for the shortage of entitlement has been the difference between L_f and the property taxes assumed for 3(b) pupils by P.L. 874. This difference (and the basis for L_f) is examined in more detail below.

Table S4

CALCULATION OF SALINA ENTITLEMENT FOR INTRADISTRICT EQUALIZATION, FY 63

		Symbol	Calculation	Amount
a.	Total local property tax revenues	L		$1,763,100
b.	Ratio of federally connected to total assessed valuation	V_f/V		.075
c.	Federally connected tax payments	L_f	a × b	$132,200
d.	Nonfederally connected tax payments	L_n	a − c	$1,630,900
e.	Nonfederally connected ADA	N_n		6,044
f.	L_n/N_n		d ÷ e	$269.80
g.	Federally connected ADA*	N_f		2,689
h.	$N_f L_n/N_n$		f × g	$725,500
i.	Net adjustment for transportation costs of 3(a) students (+$24,000) and savings due to larger proportion of federally connected high school students (−$21,400)	Q_f		+$2,600
j.	Entitlement for intradistrict equalization	F_e	h − c − i	$595,900
k.	Actual P.L. 874 entitlement for Salina†	F		$556,800
l.	Excess of F_e over F		j − k	$39,100
m.	Ratio of F to F_e		k ÷ j	.93

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* Adjusted by transfer to the nonfederally connected category of an estimated eighty-six 3(b) ADA who were entitled only by reason of secondary employment of the mothers at Schilling AFB.

† Computation of this entitlement was as follows: 1960-61 cost rate of $275.17 × 1936.5 (derived from 3(a) ADA of 1,098 plus .5 × 3(b) ADA of 1,677), plus $24,000 allowance for transportation costs of 3(a) students in excess of transportation costs included in 1960-61 cost rate. The actual method by which the Office of Education added the $24,000 for transportation costs, however, was to increase the cost rate for Salina by $12.37 (i.e., $12.37 × 1936.5 ≈ $24,000).

Table S5

TREND OF F_e vs F FOR SALINA
FY 52-FY 63
(Dollars in Thousands)

Item	FY 52	FY 53	FY 54	FY 55	FY 56	FY 57	FY 58	FY 59	FY 60	FY 61	FY 62	FY 63	Total	Percent
a. Entitlement for intradistrict equalization (F_e)	$17.2	$90.2	$79.4	$102.8	$140.3	$205.9	$229.3	$346.5	$413.6	$477.2	$706.9	$595.9	$3,405.2	
b. Actual P.L. 874 entitlement (F)	13.0	47.7	63.9	66.5	101.7	130.1	178.0	282.9	343.1	400.0	553.6	556.8	2,737.3	
c. Difference (F_e - F)	4.2	42.5	15.5	36.3	38.6	75.8	51.3	63.6	70.5	77.2	153.3	39.1	667.9	100.0%
d. Reasons for difference between F and F_e:														
1. Due to deduction of ADA entitled because of secondary employment of mother	--	-1.7	-2.6	-2.7	-3.7	-5.2	-5.9	-7.0	-8.1	-11.4	-16.0	-11.8	-76.1	-11.4
2. Due to difference between group cost rate and L_n/N_n for Salina	+4.6	+16.1	-4.6	+17.8	+10.9	+25.4	+10.6	+23.7	+22.4	+4.5	+14.5	-10.2	+135.7	+20.3
3. Due to lower proportion of federally connected high school students	-.4	-2.3	-3.3	-3.5	-5.7	-6.9	-8.2	-10.8	-13.9	-16.4	-22.5	-21.4	-115.3	-17.3
4. Due to difference between L_f and federally connected property taxes assumed by P.L. 874	--	+30.3	+26.0	+24.6	+37.1	+62.5	+55.3	+57.8	+70.4	+100.4	+177.4	+82.4	+724.2	+108.4
5. Not accounted for, due to rounding of calculations	--	+.1	--	+.1	--	--	-.5	-.1	-.3	+.1	-.1	+.1	-.6	--

Sample for Federally Connected Property Tax Payments

A sample estimate was made of the valuation of property owned or occupied by AFB personnel residing in Salina, and hence of the federally connected tax payments in Salina. For purposes of the sample, it was assumed that rental of a house or apartment by a person employed at the AFB was equivalent to ownership, since the owner of rented property would presumably pay taxes out of rental receipts. The details of the sample are given in Appendix A-1. The major result of the sample was an estimate of \$132,200 for L_f, the federally connected property tax payments in Salina for FY 63. Other data concerned the relative valuations of federally connected to nonfederally connected housing units, and the relative numbers of housing units per federally connected vs nonfederally connected ADA.

The L_f of \$132,200 derived from the foregoing sample represents a contribution of \$83.09 per 3(b) student (\$132,200/1,591 = \$83.09). This contribution may be divided by L_n/N_n, the tax contribution per nonfederally connected student, to obtain a ratio of .31 for the relative property taxes attributable to 3(b) students (\$83.09/\$269.80 = .31). This ratio when subtracted from 1.00 would then result in a ratio of .69 for PR_e, defined as the 3(b) payment ratio for intradistrict equalization. These computations are summarized below:

PR_e = 3(b) payment ratio for intradistrict equalization

$$= 1.00 - \frac{L_f/3(b)\ ADA}{L_n/N_n}$$

$$= 1.00 - \frac{\$83.09}{\$269.80}$$

$$= 1.00 - .31$$

$$= .69$$

The reasons for the departure of PR_e for Salina from the value of .5 assumed by P.L. 874 may be identified from a comparison of three relevant ratios, obtained from the sample, with the values implicitly assumed for purposes of P.L. 874 payments, as illustrated below:

	Ratio Obtained from Sample	Ratio Assumed by P.L. 874
a. Ratio of nonfederally connected residential property valuation to total nonfederally connected property valuation	.55	.50
b. Ratio of mean valuation of federally connected to nonfederally connected housing units in Salina ($1,840 ÷ $2,570)	.72	1.00
c. Ratio of federally connected housing units per 3(b) school child to nonfederally connected housing units per nonfederally connected school child (1.5 ÷ 1.8)	.83	1.00
d. Relative property taxes attributable to 3(b) ADA (a × b × c)	.33	.50
e. 3(b) payment ratio (1.00 - d)	.67	.50

The payment ratio of .67 computed above is .02 less than the PR_e of .69 derived directly from the sample value of L_f for Salina. This difference is only 3 percent, which tends to confirm the reliability of the above analysis.

The significance of these results is that the ratio of nonfederally connected residential-to-total property valuation by itself may not be a sufficient basis for reaching conclusions about the property tax contribution of federally connected families, because at least in the case of Salina, two other relevant ratios combine to more than offset the .55 property valuation ratio. It is also perhaps worth noting the considerable difficulty and expense involved in obtaining the data necessary to estimate these three ratios (or L_f) with any degree of reliability. For Salina, about three man-weeks of effort were required, not counting planning of the sample; and this time could easily have doubled except for the availability of a directory of addresses of Schilling AFB and a recent survey of residential vs commercial assessed valuation by the Salina County Clerk.

III THE INFLUENCE OF FEDERAL CONNECTION ON LOCAL EFFORT AND PERFORMANCE

School Finances in Kansas

Local and county taxes accounted for between 74 and 76% of current public school revenue in Kansas in the period FY 50 through FY 62. The percentage of current revenue of Kansas school districts coming from the federal government increased from 1.5% in FY 50 to 6.1% in FY 56, and remained between 5 and 6% thereafter. The percentage of public school revenue received from state sources was lower in Kansas than in any of the other four case study areas, averaging from 19.2 to 24.0% in the same period.*

There is no equalization aid (based on relative assessed valuation per ADA) in the Kansas state sources, although the apportionment formulas do allocate more funds per ADA to smaller districts, to districts with a higher average level of teacher training, and on similar bases. Also, half of the state sales tax subventions to school districts are allocated in proportion to the ratio that a school district's property tax levies bear to the total property tax levies of all local government agencies in the state. These sales tax subventions would of course be reduced for Salina by reason of the substitution of P.L. 874 funds for local property tax levies. However, the amount of state sales tax revenues allocated to the Salina Board of Education by this method is only about 5% of the Board's total revenues from state sources, and so the even smaller reduction in their amount due to P.L. 874 payments has been ignored for purposes of this study.

Before FY 65, different P.L. 874 group cost rates were computed by the Kansas State Department of Education for a number of categories of school districts. For FY 63, for example, the school categories and local cost rates (based on FY 61 cost data) were as follows:

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* These data were taken from the biennial Office of Education publication Statistics of State School Systems. Federal funds are currently almost entirely P.L. 874 entitlements, because vocational education and NDEA funds are included in revenues from state sources.

Category	LCR
First class cities (K-12)	$275.17
Second class cities (K-12)	236.96
Second class cities (K-8)	231.86
CSD[*] elementary and high (K-12)	346.23
All rural high schools	515.21
Community high schools (9-12)	511.89
CSD elementary, 2 or more teachers (K-8)	257.69
CSD elementary, 1 teacher (1-8)	301.83
Total, all schools	$295.64

Salina is included in the category first class cities (K-12), which comprises all public schools in the 13 largest cities of Kansas.[†] The K-12 component of Kansas first class city schools was therefore taken as the control group for purposes of financial comparisons with Salina over the period FY 50 through FY 63; this group will subsequently be referred to as KFCCS.

Trends of Financial Data for Salina Board of Education

The financial data used to describe the Salina schools are summarized for alternate fiscal years in Table S6. The sizable decline in V/ADA (line 1) is due in part to the increase of federally connected children. The increase in C/ADA (line 2) is typical of the increases experienced during the 1950's by school districts in the United States.

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[*] Common School District.

[†] Prior to FY 63, when Junction City was added, the following twelve cities were included: Atchison, Coffeyville, Ft. Scott, Hutchinson, Kansas City, Lawrence, Leavenworth, Parsons, Pittsburg, Salina, Topeka, and Wichita.

Table S6

SELECTED FINANCIAL DATA FOR SALINA BOARD OF EDUCATION
FY 50-FY 63

Item	FY 50	FY 52	FY 54	FY 56	FY 58	FY 60	FY 62	FY 63	Change FY 50-63
1. Assessed valuation per ADA (V/ADA)	8,808	9,544	8,219	7,404	7,392	6,698	6,226	6,608	-2,200
2. Current expenses of education per ADA (C/ADA)	$187.10	$210.50	$230.70	$262.40	$277.40	$325.20	$350.50	$379.40	+$192.30
3. Major current revenue sources per ADA									
a. Property taxes*	$139.60	$170.11	$124.60	$153.90	$163.30	$187.90	$188.80	$200.10	+$ 60.50
b. P.L. 874 entitlement	--	3.20	12.50	17.10	27.00	44.80	62.30	63.20	+63.20
c. Added county revenues†	9.30	9.40	26.10	14.90	13.00	23.40	16.10	23.50	+14.20
d. State subventions	44.80	35.70	40.00	53.10	52.00	63.20	90.20	88.10	+41.30
4. Major current revenues as a percentage of C									
a. Property taxes levied within Board of Education	74.7%	81.0%	53.9%	58.8%	59.0%	57.9%	53.8%	52.8%	-21.9%
b. P.L. 874 entitlement	--	1.5	5.4	6.5	9.7	13.8	17.8	16.7	+16.7
c. Added county revenues*	5.0	4.5	11.3	5.7	4.7	7.2	4.6	6.2	+1.2
d. State subventions	24.0	17.0	17.3	20.2	18.7	19.4	25.7	23.2	-0.8
5. Total school tax rate, mills*	19.90	20.07	24.83	27.83	29.98	34.54	38.36	39.71	+19.81

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* Including countywide school levy applicable to Salina Board of Education.

† Sum of equalization tax revenues (levied in Salina County outside Salina) and excess of countywide school tax revenues over countywide school tax levy within Salina Board of Education.

The major revenue sources of the $192 increase in C/ADA are identified in lines 3a through 3d: +$61 from property taxes, +$63 from P.L. 874 entitlement, +$14 from county property taxes levied outside the Salina Board of Education boundaries, and +$41 from increased state subventions per ADA, for a total of $179. The $13 remainder of increased C/ADA would come from other local sources, and from changes in end-of-year balances.

Lines 4a through 4d of Table S6 indicate the changes in the relative importance or mix of major current revenues for Salina schools. The notable changes are a decline in local property taxes as a percentage of C from about 75 to 53% and the offsetting increase of P.L. 874 entitlement from zero to about 17% of the total. Finally, line 5 indicates an approximate doubling of the total school tax rate between FY 50 and FY 63.

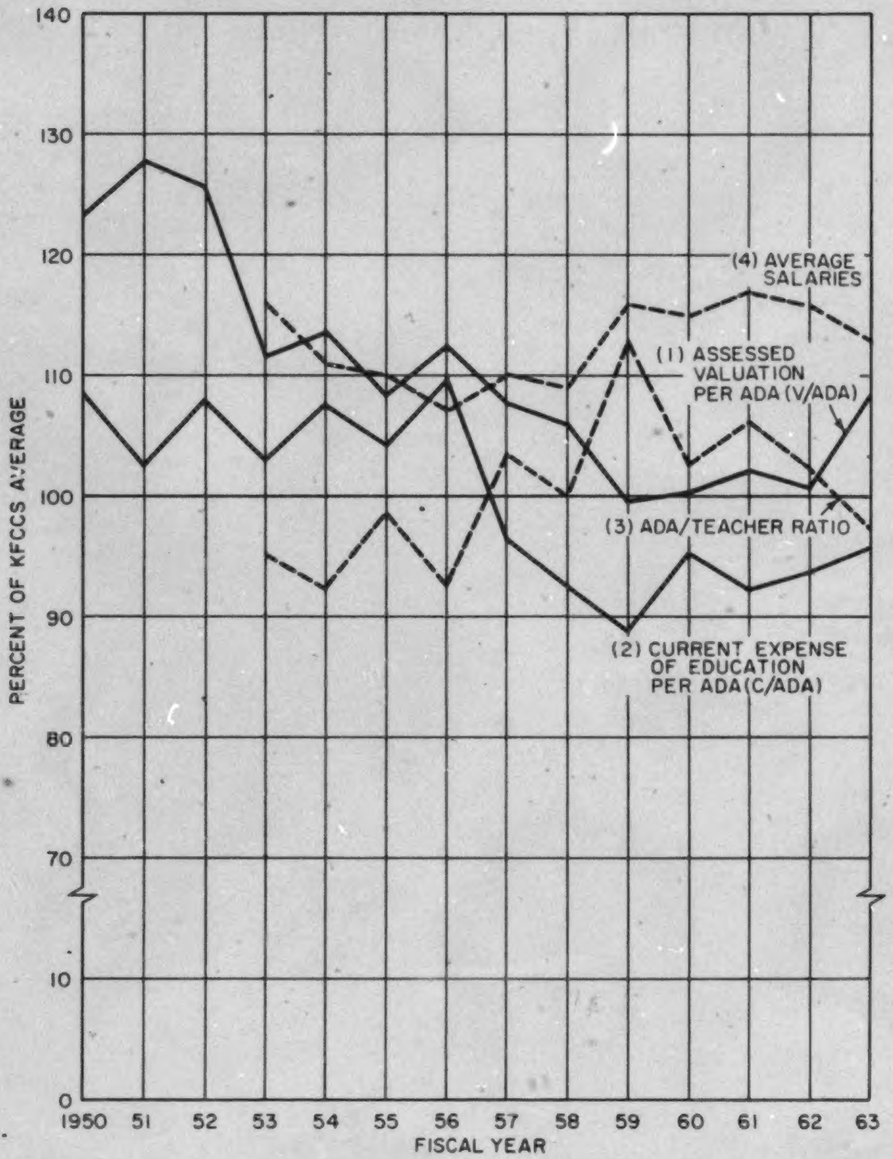
Salina Financial Data Related to All KFCCS

The data in Table S6 do not show how financial trends in the Salina Board of Education compare with those for the control group of all KFCCS. For that purpose, data shown in the table (together with other types of school finance data) were computed as a percentage of identical data averaged for all KFCCS. The results are shown in Charts S2 and S3, and the index changes revealed in these charts are worth considering in some detail. Using the three years FY 50-52 as a base period for the pre-federal impact condition (except for lines 3 and 4, where data were not available before FY 53), the adjustments that would be necessary to restore the indexes to their base periods were therefore calculated. An analysis of these "restoration" adjustments follows:

1. Line 1 on Chart S2 shows a decline in V/ADA for Salina relative to the average for all KFCCS, from 127.1% in the base period to 108.3% in FY 63 (with some leaner years in between). A decrease of about 1,900 ADA in Salina would be necessary to restore the relative V/ADA ratio to the base period level. The federally connected ADA of 1,098 3(a) and 1,591 3(b) pupils (after elimination of 3(b) ADA's entitled due to secondary employment of

CHART S2

SELECTED FINANCIAL DATA FOR SALINA VS AVERAGES FOR KANSAS FIRST-CLASS CITY SCHOOLS FY 1950-1963



mothers) would account for the relative decline, since 1098 + (1591 ÷ 2) ≈ 1900.*

2. Line 2 for C/ADA shows a decline from 106.4% of the KFCCS average in the base period to 95.8% in FY 63. To restore the C/ADA index to its base period level would require adding $368,000 (+11%) to the FY 63 Salina operating budget. It is evident that, in spite of the rapid increase in C/ADA for Salina, noted in Table S6, line 2, current Salina expenses per pupil have fallen behind the average for all KFCCS.

3. The major part of the relative decrease in C/ADA can be traced to the relative increase in the Salina ADA/teacher ratio shown in line 3. The movement of the ADA/teacher ratio generally opposes that of the C/ADA ratio over the years, indicating somewhat larger average class sizes after FY 56. The relative changes in average class size underlying line 3 are summarized below for selected years:

	ADA/Teacher Ratio		
Year	Salina	All KFCCS	Salina-KFCCS
FY 53	23.7	24.9	-1.2
FY 56	21.7	23.4	-1.7
FY 59	24.3	21.5	+2.8
FY 63	21.7	22.3	-0.6

The Salina ADA/teacher ratios do not exceed the level generally regarded as acceptable for good learning (28-30 in terms of students per teacher, equivalent to about 25-27 in terms of ADA per teacher). Also, while the ratio increased during the period of rapid growth of federally connected ADA, by FY 63 the Salina ratio had returned below the average for all KFCCS. Nevertheless, the increase of 2.6 in the Salina ratio from FY 56 to FY 59 is significant, and probably indicates much larger increases in some classes. The specific reasons for the FY 56-FY 59 increase have not been examined in detail, but may have such causes as revenue shortages and/or underestimates of future school attendance during rapid growth periods, resulting in underhiring of teachers.

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* Strictly speaking, the average federally connected ADA in KFCCS should also be taken into account, as well as the actual contribution to V by federally connected families in Salina. However, the rough reconciliation used here is sufficiently accurate for purposes of demonstration. It will be interesting to observe in future years whether the 1965 closing of Schilling AFB and departure of nearly all federally connected children will in fact restore Salina's V/ADA to its former excess over that for KFCCS.

4. Line 4 represents the average salary of Salina teachers (including principals and other certificated personnel) divided by the average salary of all KFCCS teachers. Salina has paid a consistently higher average, although its lead over the average for all KFCCS declines from 16% in FY 53 to 10% or less from FY 55 to FY 58. The lead subsequently increases to the 15-17% range from FY 59 to FY 62, then declines slightly to 13% in FY 63.

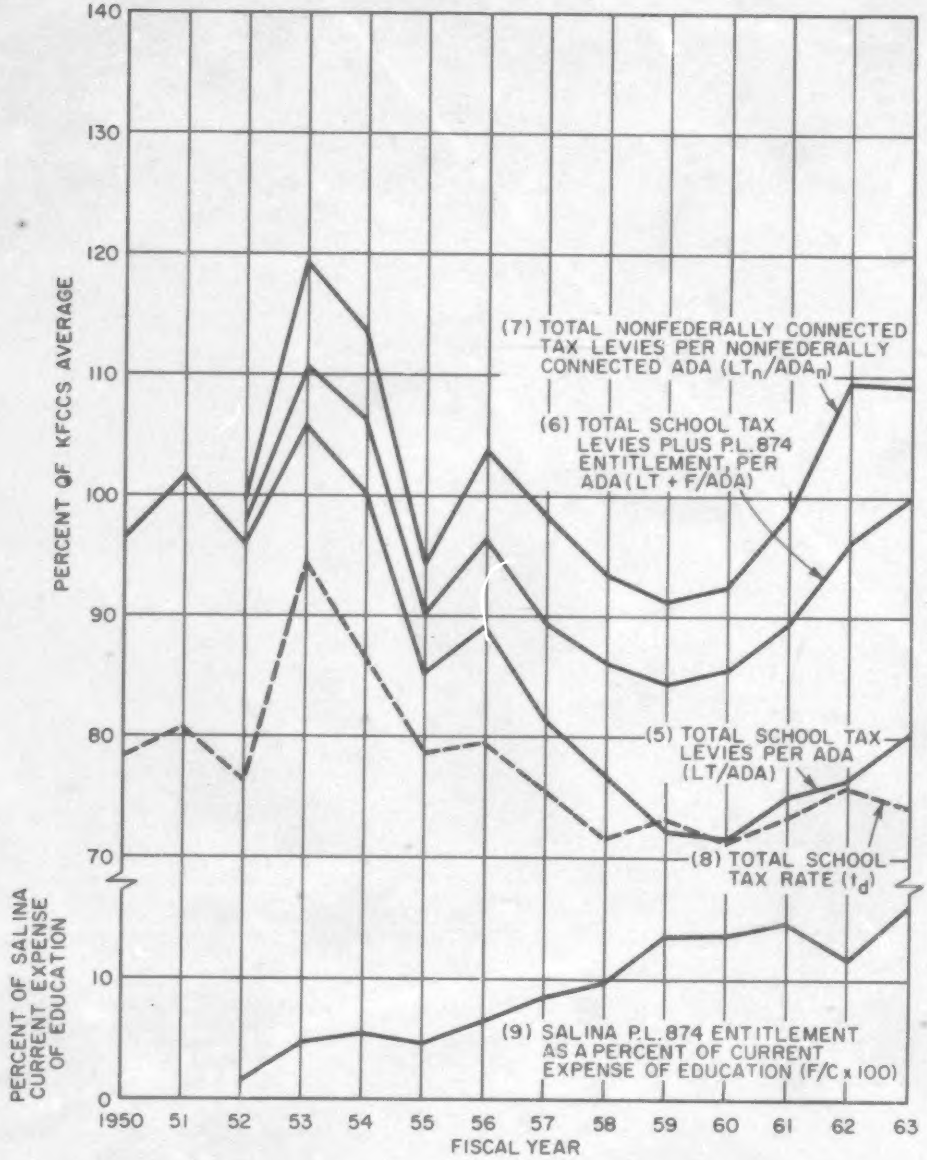
   The other question of interest at this time is to what extent various revenue sources have reacted to or caused the reduction in relative C/ADA. This question is considered in connection with lines 5-9, which have been shown separately on Chart 3 to avoid confusion.

5. The total school tax levies per ADA shown in line 5 of Chart S3 include school taxes levied for all purposes: current expenses, construction, and bond interest and redemption. The symbol "LT" has therefore been used, rather than L, which in this report usually symbolizes taxes for current expenses only. Total tax levies per ADA for Salina show a steep decline from a base period figure of 97.9% of the average for KFCCS to only 80.4% in FY 63. This is equivalent to a decline of about 22% or $502,000 in Salina property tax levies.

6. Line 6 of Chart S3 represents the Salina tax levies of line 5 with Salina's P.L. 874 entitlements (F) added in, per ADA, divided by the total tax levies per ADA for all KFCCS. The grounds for adding F to local tax levies are, of course that P.L. 874 funds are intended to replace equivalent foregone tax revenues from federally connected families. The fact that line 6 is generally nearer the base period average than line 5 tends to indicate that this has been happening in Salina. For example, in FY 63 the Salina F of $556,800 somewhat exceeded the decline of $502,000 in property tax levies noted in connection with line 5.

CHART S3

SALINA TAX LEVIES/ADA AND TAX RATE VS AVERAGES FOR KANSAS FIRST-CLASS CITY SCHOOLS FY 1950-1963



7. Line 7 shows that total nonfederally connected tax levies (LT_n) raised per nonfederally connected ADA by Salina have generally kept up with or exceeded the base period reference point for LT/ADA of 97.9%, except for the lag in FY 58 to FY 60. The gap between line 6 and line 7 shows that P.L. 874 entitlements (F) did not entirely achieve intradistrict equalization with local taxes for nonfederally connected ADA, a conclusion already reached in Section II.

8. Line 8 on Chart S3 shows the annual total school tax rate for Salina vs the average rate for all KFCCS. In both cases, the tax rates include all those levied by the school districts themselves plus the applicable countywide school tax rates. The two major points of interest with respect to the trend of the relative Salina school tax rate are that its base period average of 78.5% was well below the KFCCS average, and that by FY 63 the relative Salina rate had decreased a little more, to 74.4% of the KFCCS rate. It would have required an increase of 2.19 mills in FY 63 to restore the Salina tax to its base period level, which would have raised $128,500 in additional tax levies on the basis of 1962 assessed valuation.

   Note that the relative Salina tax rate shows a jump in FY 53 from the average of the base period, and then declines almost every year until FY 63, when the 74.5% level is reached. This trend was caused by an increase of some 5 mills in the Salina rate in FY 53, followed by several years in which the Salina rate did not increase as rapidly as the average rate for all KFCCS.

9. Line 9 on Chart S3 merely shows P.L. 874 entitlement as a percentage of current expense of education (F/C) for Salina, to illustrate the gradual growth of the relative importance of P.L. 874 funds in the current school budget of Salina.

Chart S3 omits two revenue sources that were identified in Table S6, "state subventions" and "added county revenues," in order to simplify the analysis. It should therefore be noted that Salina has remained at approximately the same level in state subventions per ADA as a percentage of the KFCCS average. Comparative data for all KFCCS on added county revenues are not available, but county revenues were only about 6.2% of Salina current expenses in FY 63 and the possibility of significant errors in the relative change is very slight.

Summarizing the foregoing analysis of Salina school finances, it will be recalled that current expenses of education were low by $368,000 in FY 63 compared with the base period (line 2, Chart S2), but that total school tax levies plus federal entitlement per ADA (line 6, Chart S3) had returned to the base period level by FY 63. Since Salina state revenues per ADA were also keeping pace with the KFCCS average, it is not easy to understand why C/ADA did not recover to the base period level by FY 63. The reason may be due to the large increases that took place in end-of-year general fund balances for Salina between FY 60 and FY 63, as summarized in the following tabulation:

	Dollars in Thousands			
	FY 60	FY 61	FY 62	FY 63
1. General fund expenditures	$2,357	$2,597	$2,949	$3,224
2. Year-end general fund balance	801	936	1,258	1,450
3. Change in balance from previous year	+90	+134	+322	+192
4. Item 2 as a percentage of item 1	34%	36%	43%	45%

If the year-end balance in FY 63 had been only 34% of general fund expenditures, as in FY 60, it would have been only $1,096,000--or $354,000 less than the actual balance of $1,450,000. Therefore, the revenue was apparently available for raising C/ADA in FY 63 to approximately the base period level, but it was not used by the Board of Education.

Effect of Federal Connection on Educational Program

Although a good program appears to have been offered at both the elementary and secondary levels in Salina at the beginning of the study period, no significant changes in the elementary program were noted through FY 63. There was an increase in the level of academic preparation of elementary teachers and a lowering of their average age. The increase in the ADA/teacher ratio already noted was probably at least as great at the elementary level as the average for Salina, but separate statistics are not available. Double elementary class sessions were necessary in only one year, early in the 1950's. On the whole, there appears to have been little effect of federal connection pro or con on the Salina elementary schools, other than the availability of newer and better equipped schools in many parts of the city to house the added students. One of the new schools was the second junior high, for example, which certainly would not have been constructed except for the increased enrollment due to federal connection.

At the beginning date of the study, the high school was offering a generally comprehensive program, providing course work for the college preparatory student, the child who would be connected with agriculture as a vocation, and the one who would be entering nonagricultural occupations. Homemaking and commercial subjects were also given, as were laboratory sciences, foreign language, and four years of English. The subsequent changes observed in the curriculum tended to be changes in degree rather than kind, of which some highlights are noted below:

1. In the field of foreign language the offerings were both broadened and deepened. At the beginning of the period two years of Latin, French, Spanish, and German were offered. Some of these were given only in alternate years and one might be dropped for a short time. The end of the period indicated that the above languages were given for three years, with the exception of Latin, which was offered for four years. Three years of Russian had also been added to the curriculum. It would appear that as the enrollment increased, the course offerings in the advanced levels kept pace with the demand generated by the larger number of students.

   It is possible that the presence of children from Schilling AFB increased the demand for the languages, since many of these had been exposed either to a language on a foreign assignment or had seen a need for language as part of the work their parent was doing.

2. In the field of mathematics, the program also showed significant expansion. A four-year sequence of algebra, plane geometry, algebra II, trigonometry, and solid geometry for the college-bound, and a general and applied mathematics course for the terminal student were the offerings in the early 1950's. A fifth year of advanced mathematics is now offered, and the student

desiring the caletics (calculus and analytical geometry) must complete plane and solid geometry in one year and algebra II and trigonometry in one year. The curriculum for the non-college student has also been increased by an advanced general mathematics offering and a course in personal finance.

3. A strong science program existed at the beginning (laboratory courses in biology, chemistry, and physics), so that a student could obtain three years of instruction. During the study period enough science courses were added to allow a student opportunity to complete at least five years of science training at an introductory level. Electronics, physiology, industrial science, and laboratory techniques were added. The courses in chemistry and biology were modified on the basis of research accomplished by the Biological Sciences Curriculum Studies and the Physical Science Study Committee--both groups funded by the National Science Foundation.

4. Vocational or prevocational education also improved during the period examined. Courses on operation and maintenance of engines (auto shop), machine shop, and general trades were added to the program. The level of courses in mechanical drawing and drafting were upgraded by special equipment additions.

5. In the areas of homemaking and business education few new courses were added. In this area, as well as others, the courses were offered with increasing frequency, so that the ever increasing number of students could receive instruction in moderate-sized classes and avoid conflicts which would force choices between two highly desired courses.

6. The percentage of Salina high school graduates entering other schools--chiefly 4-year colleges--ranged from 40 to 50% from FY 53 through FY 55; 46 to 62% from FY 56 through FY 60; and 54 to 59% from FY 62 through FY 64. While somewhat erratic, these statistics appear to indicate that the level of educational ambition of high school graduates did not suffer from federal connection.

7. The ratio of high school counseling hours per pupil showed approximately a 50% increase during the period. This increase may be related in part to the increasing percentage of students proceeding to education beyond high school. The pupil/teacher ratio in the high school increased slightly, from about 1 to 21 in 1954, to 1 to 23 in FY 63, which is still within the accepted range for quality education.

In summary, the increase in total enrollment due to the AFB has obviously made a richer high school program possible; but there is no evidence that there is a difference in the type or ability of federally connected and nonfederally connected students, nor is there a basis for attributing many specific changes in the educational program directly to the needs or demands of federally connected students.

Economies of Scale and Growth

No economies of scale *per se* were identified in this study. However, because of the rapid growth rate of the district, the employment of younger teachers enabled the average teacher salary cost to be maintained at a lower level than would otherwise have been the case (see line 4 of Chart S2, between FY 53 and FY 58). Growth also resulted in a large number of new school buildings which had lower maintenance costs during the period.

These slight economies will disappear as the growth of the district is slowed, since the costs of teachers will rise without continued intake at the lower end of the schedule; and as the buildings age, maintenance costs will increase.

IV THE OPERATION OF P.L. 815

Salina Board of Education expenditures for school construction, expansion, and new equipment during the period of P.L. 874 entitlement totaled approximately $6,780,000. Of this total, $1,900,000 should be deducted for purposes of comparison with P.L. 815 payments, as representing the expenditures for replacement structures and equipment,* a physical education building and junior high school cafeteria, portions of a senior high addition not used for housing students, and several multipurpose rooms added to existing schools. The remainder of $4,880,000 is approximately the amount that would be considered for payment under Section 5 of P.L. 815 if only federal students were being housed: it represents the cost of (a) several complete elementary schools and a second junior high, and (b) additions to the high school, the first junior high, and several elementary schools. A detailed breakdown of the $4,880,000 by source is shown in Table S7, indicating (in the recapitulation) that federal funding of $1,090,000 under Section 5 of P.L. 815 accounted for 22.3% of total Board of Education school construction expenditures during the period FY 52-FY 64. (An additional $539,000, not shown on the table, was expended by the Housing and Home Finance Agency under Section 10 of P.L. 815 for the school at Schilling AFB; these funds and the students at the Schilling AFB school will not be considered in the following discussion, which is limited to Section 5 of P.L. 815.)

A comparison of estimated federal vs nonfederal growth in ADM (average daily membership) may be made by adding 10% to the ADA data for FY 51, the year preceding the first influx of federal students, and FY 64, the last year considered for school construction purposes. This comparison is shown below.

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* Replacement expenditures were estimated at 50% of expenditures from 2-mill building fund receipts.

Table S7

SUMMARY OF SALINA SCHOOL CONSTRUCTION FUNDING
FY 52-FY 64
(Dollars in Thousands)

		Relevant Construction Expenditures			
Year	Bonds Issued	Bond Receipts	2-Mill Fund Receipts	P.L. 815 Receipts	Total
FY 52		$ 12	$ 7		$ 19
53	$ 750	789	58		847
54		6	34	$ 77	117
55		11	54		65
56	1,250	52	30	150	232
57		339	26		365
58		669	15		684
59	300		380		380
60	1,250	258	31		289
61		524	21	243	788
62	1,200	20	11	54	85
63		434	4		438
64			5	566	571
Total	$4,750	$3,114	$676	$1,090	$4,880

Recapitulation

	Thousands of Dollars		Percent
Federal Funding:			
P.L. 815 Receipts		$1,090	22.3%
Nonfederal Funding:			
Bond Receipts	$3,114		
2-Mill Fund Receipts	676	3,790	77.7
Total		$4,880	100.0%

	FY 51	FY 64	Change
Federally connected ADM			
Sec. 5(a)-1 of P.L. 815	0	358	+358
Sec. 5(a)-2 of P.L. 815	0	1,834	+1,834
Total federally connected	0	2,192	+2,192
Nonfederally connected ADM	4,384	7,076	+2,692
Total	4,384	9,268	+4,884

An average school construction and equipment cost of $999 per ADM is obtained from the above data and Table S7 ($4,880,000 ÷ 4,884). This figure appears reasonable in comparison with statewide per pupil cost rates of between $1,060 and $1,200 for Kansas in recent years.

The growth of 2,192 in federally connected ADM accounted for 44.9% of the total Salina growth of 4,884 ADM from FY 51 to FY 64--exclusive of the 890 ADM at the Schilling AFB school in FY 64.

Analysis of the reasonableness of the 22.3% federal contribution to school construction costs is presented in Volume I of this report. The conclusion reached there, in brief, was that the federal contribution was about 57.4% of the full burden of school construction costs due to increases in federally connected enrollment, taking into consideration the estimated tax contributions of federally connected families residing in Salina. The shortage of $810,000 was due partly to the failure of some of the federally connected ADM increase to qualify for P.L. 815 aid (due in turn to the relatively gradual nature of the increase in many years), and partly to the fact that the P.L. 815 payment ratio of .5 for 5(a)-2 students was too small to compensate for the shortage in average property tax contributions associated with federally connected students (compared with nonfederally connected students).

No particular administrative problems were cited by the Salina school administration in connection with P.L. 815 applications, and all applications submitted were granted by the Office of Education (with the exception of the recent cancellation of a $4,000 former commitment). It is of interest, however, that the sizable P.L. 815 payments expended in FY 61-64 were made possible chiefly by the discovery that available elementary classroom space per pupil was far below federal and state standards, due to previously undetected increases in the number of pupils occupying crowded classrooms.

V SUMMARY AND CONCLUSIONS

This detailed account of the Salina public school system has had the objective of showing all significant, measurable effects of federal connection and entitlement under P.L. 874 and P.L. 815. Other, more intangible, impressions were gained in the study which are also important, such as the frequent acknowledgment by personnel of Schilling AFB of the excellence of Salina schools; the obvious acceptance by the school superintendent and his staff of federally connected children on an equal basis with children of local residents; and the many indications of efforts by the city's leading citizens, news media, and management of Schilling to establish a rapport between AFB personnel and the community.

On the tangible level, the P.L. 874 entitlement payments have apparently been serving their major purpose in Salina by easing the burden on the local school district of the unmet costs of educating federally connected children. For intradistrict equalization, however, federal payments would have had to be higher by an average of 20%. The effect of the federal payments on the Salina school tax rate, already low relative to the average rate for all Kansas first class city schools before federal entitlement (due probably to Salina's relatively high V/ADA ratio), may have been to cause a still lower effort in some years (line 8 of Chart S3); however, even if this effect could be attributed to the substitution of P.L. 874 payments, the effect is not great and by FY 63 the relative tax rate was nearly back to its base period level. To have substituted local taxes entirely for P.L. 874 entitlement in FY 63 would have required a tax increase of some 9.5 mills, which would have raised Salina's relative tax effort far above the base period level.

The consequence of low P.L. 874 payments and a relatively low tax rate was first felt in Salina in FY 57, with a decline in relative C/ADA and an increase of the ADA/teacher ratio (Chart S2). The ADA/teacher ratio had been restored to about the base period level by FY 63, and C/ADA would probably also have been restored except for a buildup in end-of-year fund balances in FY 63.

P.L. 815 funds were of considerable help to Salina in meeting the construction needs for federally connected children, though as in the case of P.L. 874 payments, the full cost on the basis of intradistrict equalization does not appear to have been met (assuming the continued operation of Schilling AFB, of course).

The educational program in Salina public schools, good to begin with, was considerably improved at the secondary level and relatively unchanged at the elementary level, except for slightly higher ADA/teacher ratios during much of the period. Part of the secondary improvement was doubtless due to the increased numbers of children, including federally connected children, which made a richer school program possible. The relatively high proportion of officers vs enlisted men at an air force base probably also raised the average ability and/or aspirations of federally connected students, compared with types of military bases in which fewer officers would be present.

APPENDIX

Appendix S-A

ANALYSIS OF DIFFERENCES BETWEEN GROUP COST RATE AND L_n/N_n FOR SALINA BOARD OF EDUCATION IN FY 63

FY 61 group cost rate for Kansas first class city schools (KFCCS) used for FY 63 entitlement		$275.17
1. Add: two-year change in cost rate	+$1.28	
FY 63 cost rate for KFCCS		476.45
2. Add: excess of current receipts over current expenditures per ADA for KFCCS in FY 63	+2.59	
FY 63 KFCCS cost rate if based on current receipts rather than on current expenditures		279.04
3. Deduct: KFCCS current receipts other than property taxes in FY 63, per ADA	-14.46	
FY 63 KFCCS cost rate if based only on current property tax receipts		264.58
4. Add: net effect of converting from (a) a ratio of total current property taxes to total ADA to (b) a ratio of nonfederally connected current property taxes to nonfederally connected ADA (L_n/N_n)*	+26.63	
L_n/N_n for KFCCS in FY 63		291.21
5. Deduct: adjustment to L_n/N_n computed from FY 63 data for the Salina Board of Education	-21.41	
L_n/N_n for Salina Board of Education in FY 63		$269.80
Net adjustment	-$5.37	

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* For this adjustment, federally connected property taxes (L_f) were estimated on the same basis assumed by P.L. 874, i.e., the proportion of total property valuation attributable to federally connected families is equal to the ratio .5 × 3(b) ADA ÷ non-3(a) ADA, or .5 × 17,742 ÷ 134,428 for KFCCS. The resulting ratio of .0660 was multiplied by L, total KFCCS property tax receipts, to obtain L_f (.0660 × $36.38 million = $2.40 million). L_n, nonfederal property taxes, was obtained by subtracting L_f from L. The result of $33.98 million, when divided by the nonfederal ADA of 116,686, produced the rate of $291.21, shown as L_n/N_n for KFCCS.

A STUDY OF
THE OPERATION OF PUBLIC LAWS 874 AND 815
IN VALLEJO, CALIFORNIA

By: Robert W. Davenport and John G. Gregory

I INTRODUCTION

The Vallejo Unified School District was chosen as a case study because it is a heavily entitled district, and substantial changes in the number and composition of the entitled enrollment have taken place in the school district over the course of P.L. 874.

The district is located in Solano County, California, which is a part of the San Francisco-Oakland metropolitan area. It encompasses the City of Vallejo and most of Vallejo Township. The public school system includes 17 elementary schools, 4 junior high schools, 2 senior high schools, and a junior college. Adult education courses, a limited summer school program, and a special apprenticeship program are also offered. As of October 1964 the district was serving over 17,000 students and was employing 804 persons of whom 699 were certified instructional personnel. Forty percent of the ADA were entitled students.

The community has been largely shaped in its economic and social characteristics and in its educational needs and capabilities by the dominant role of federal activities in the area for more than a century. The U.S. Naval Shipyard located in Vallejo on Mare Island has a large proportion of civilian employees and is the major local employer; there are also a number of military operations on the island. Federal operations in the area surrounding the district have also been important to Vallejo, particularly Benicia Arsenal and Travis Air Force Base. The number of employees at these various federal installations has undergone a series of sharp fluctuations over the years, particularly at the shipyard, and has brought great changes in the population of the district. (See Table V1.)

As a result of these federal activities, approximately 39% of the employed civilian residents of Vallejo in 1960 were employed on federal installations, or 46% if military personnel are included.* Another 22% are estimated to be employed in activities serving persons engaged in federal activities, leaving only 32% engaged in employment not related to federal activities. The dominant position of government activity in

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* The U.S. Census statistics relating to all government employees have been corrected to exclude a small number of local and state government employees estimated to account for less than 2% of total employment.

Table V1

CIVILIAN EMPLOYMENT AT MARE ISLAND NAVAL SHIPYARD AND POPULATION OF VALLEJO TOWNSHIP

Selected Years

Year	Civilian Employment Mare Island Naval Shipyard	Population Vallejo Township
1910	2,200	12,100
1920	8,400	24,000
1930	4,200	20,200
1940	6,447	30,100
1944	35,200	88,400
1950	9,200	70,100
1960	9,700	72,500
1963	10,700	74,400

Source: Vallejo Chamber of Commerce.

the economy of the community is even more striking when only the jobs available within the community itself are considered. According to statistics of the California Department of Employment the government sector in July 1964 accounted for over 52% of all jobs in the Vallejo Census Division (the boundaries of the Vallejo Census Division, the township, and the Unified School District are approximately the same). In contrast, the manufacturing sector accounted for only 800 of the 25,300 civilian jobs in Vallejo versus about 20% in the nine-county San Francisco Bay Area.

A second factor that has had a major impact upon the community and especially upon the school district has been the closing of federal housing built during World War II. The number of dwelling units of federal public housing declined from 13,600 in 1946 to zero in 1959. Military housing projects, however, still exist on Mare Island and in the City of Vallejo. These changes in the supply of federal housing have, of course, affected the number of 3(a) and 3(b)1 students attending the schools of the district. The public housing may also have tended to attract lower income groups to the area because of the low rents available.

Selected characteristics of the Vallejo population in 1960 are presented in Table V2 with comparable statistics for the San Francisco-Oakland Standard Metropolitan Statistical Area (SMSA), California, and the United States. Vallejo is a low- and middle-income community with a relatively small percentage of its population in the higher income brackets and in white collar occupations. The educational achievement of the adult population in Vallejo is lower than both the SMSA and the state, although generally above the national average. The percent who have attended college is considerably below the norm of both the metropolitan area and the state and is no greater than that of the United States. The percent of college graduates is less than half that of the SMSA and is even less than the percent for the entire United States.

Table V2

SELECTED POPULATION AND HOUSING CHARACTERISTICS
1960

	Vallejo	San Francisco-Oakland SMSA	California	United States
Population				
Percent under 18 years	35.2%	32.6%	34.7%	35.8%
Median age	29.6%	31.7%	30.0%	29.5%
Percent nonwhite	19.6%	12.5%	3.0%	11.4%
Population per household	3.11	2.92	3.05	3.29
Income				
Median family income	$6,606	$7,092	$6,726	$5,660
Percent under $3,000	13.5%	11.9%	14.1%	21.4%
Percent $10,000 and over	17.1%	24.4%	21.8%	15.1%
Employment				
Percent government workers	41.3%	16.6%	10.6%	12.2%
Percent self-employed	7.9	9.1	10.6	12.2
Percent craftsmen, foremen, and kindred workers	20.6	13.3	13.9	13.5
Percent operative and kindred workers	13.5	12.7	14.9	13.4
Percent service workers incl. household	12.9	11.4	10.4	11.1
Percent laborers, incl. farm	5.8	5.0	6.7	7.0
Percent white collar	42.2	51	47.3	41.1
Education				
Median school years completed by persons 25 years or older	11.6	12.1	12.1	10.6
Percent enrolled in school by age				
5 and 6 years old	82.7	83.9	82.8	63.8
7 to 13 years old	99.0	98.3	98.2	97.5
14 and 15 years old	96.8	96.9	96.3	94.1
16 and 17 years old	56.7	86.8	83.3	80.9
Percent enrolled in public school				
Kindergarten	99.7	95.5	96.0	85.9
Elementary (1 to 8 years)	92.8	87.3	89.3	85.6
High school (1 to 4 years)	89.4	88.6	91.7	88.9
Percent of persons 25 years and older who completed 1 or more years of college	16.5	25.3	23.2	16.5
Percent of persons 25 years and older who completed 4 or more years of college	6.1	12.0	9.8	7.7
Housing Units				
Percent owner-occupied	58.2%	49.6%	58.4%	61.2%
Median value of owner-occupied housing	$12,400	$16,300	$15,000	$11,200
Median gross rent of renter-occupied housing	$66	$78	$79	$71
Percent persons 5 years old and over living in same house as in 1955	42.3%	41.5%	37.3%	49.9%

Source: U.S. Census, 1960.

II THE NATURE AND EXTENT OF FEDERAL IMPACT IN VALLEJO

General Trends in Employment, Population, and ADA

The relationship between employment, population, and ADA in Vallejo since 1950 is illustrated in Chart V1. Because of the Korean war (June 25, 1950-July 27, 1953), defense activity at Mare Island increased rapidly between 1950 and 1952. Civilian employment at the Naval shipyard increased by over 6,800 employees, a gain of almost 75 percent, of which almost three-fourths occurred in the first year. Statistics on military and other civilian employment at Mare Island are not available for this time period but it would appear reasonable to expect that these categories also experienced substantial gains. Total civilian employment in the community, however, did not grow at a proportionate rate. At best, private employment increased by only 20%, and quite possibly the actual gain was even less.

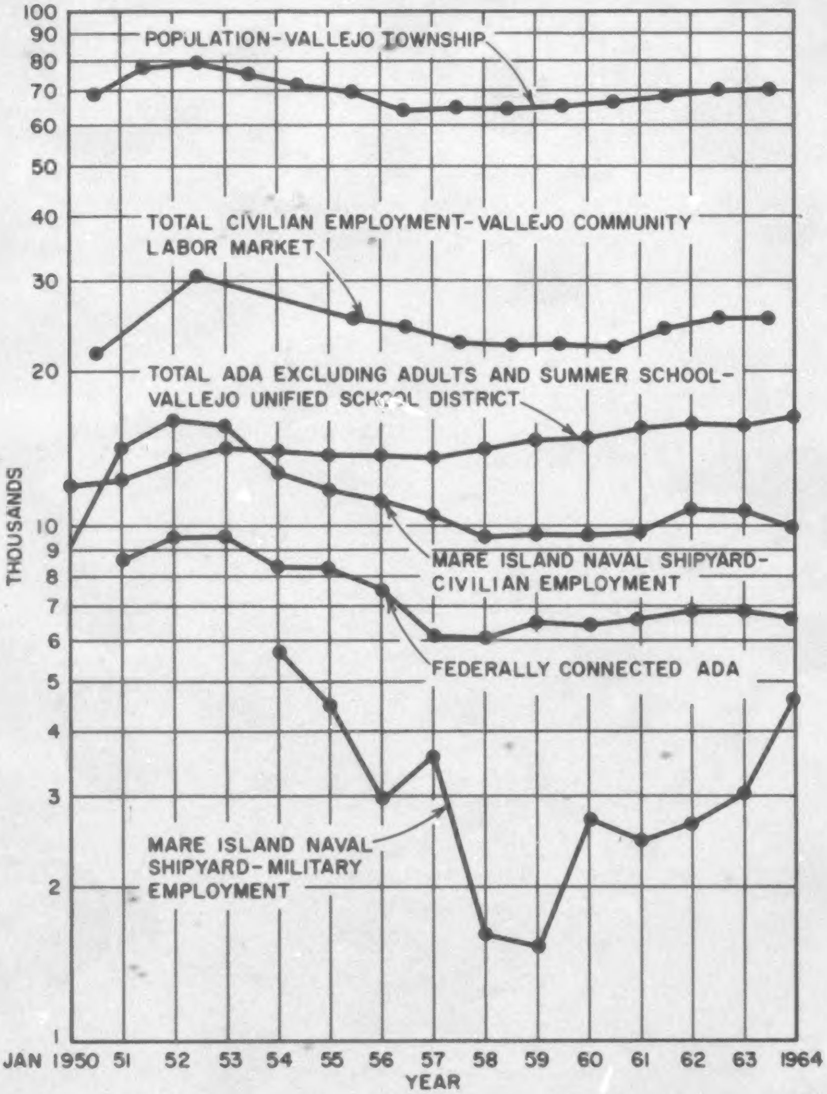
The increased employment opportunities in Vallejo during the Korean war resulted in an estimated population increase of about 10,000 for the township. On a percentage basis, however, this increase in population amounted to a gain of less than 15%. It would appear, therefore, that a large portion of the increased number of jobs in Vallejo was filled by people who commuted to Vallejo from other communities.

The result of these changes in employment and population in Vallejo during the early 1950's was an increase in the demand placed upon the school district. The total ADA, excluding adults and summer school students increased by 2,052 or 17% between the school years 1950-51 and 1952-53. During this period the percent of the enrollment that was federally connected reached a high of 70.9% in the school year 1951-52.

Federal activity at Mare Island decreased substantially during the five-year period after the end of the Korean war (see Chart V1). By January 1958, civilian employment at the shipyard had returned to the same level as had existed in January 1950, with almost one-half of this decline occurring in the one-year period January 1953 to January 1954; military employment at the shipyard decreased at an even more rapid rate. Total private employment declined more slowly than did federal employment, and the community retained some of the increase in private employment that had occurred between 1950-52.

CHART V1

CHANGES IN EMPLOYMENT, POPULATION, AND ADA IN VALLEJO
1950-1964



SOURCE: California Department of Employment, Vallejo Chamber of Commerce, Vallejo Unified School District. Stanford Research Institute.

NOTE: Fiscal year data plotted on January 1, basis.

During 1961 the shipyard increased its civilian staff temporarily by approximately 1,000, but by 1964 the size of the civilian staff had returned to its 1958-60 level. Military employment at the shipyard, however, almost doubled, with an increase of over 2,000. Private employment in Vallejo appears to have been increasing slowly since 1960.

The population of the township has followed a pattern similar to that of employment since 1953. From a high of 80,000 in 1952 the population had declined by an estimated 16,000 by 1956, and since then has grown slowly back to its 1950 level of 70,000. This decline in population was the result of changes in federal employment opportunities, accompanied by the closing of federal housing. During the period of declining population in the township, the federal government was in the process of disposing of all its public housing; some of this housing was transferred to a local housing authority or sold to private interests, and approximately 5,000 dwelling units of the federal government were destroyed or removed from the area. The federal government was fairly successful in phasing out its public housing at the same time as the total demand for housing was decreasing because of reduced employment opportunities in the community. If the federal government had not disposed of the public housing, the reduction in federal employment might have been even more disruptive in the community, with increases in housing vacancies and reductions in residential values.

In some respects, the impact of federal activities upon the school district was not as severe after the Korean war as it had been earlier. The ADA excluding adults and summer school students decreased by only 818 from 1952-53 to 1956-57, a decline of less than 6% over this four-year period. Since then the ADA has been increasing fairly steadily each year. The percent of the ADA which is federally connected, however, declined substantially, reaching 45% in 1956-57 and 40% in 1963-64.

The relative stability of the Vallejo ADA since 1952-53 would appear to be partially the result of an important change that has been taking place with respect to the age composition of the population. The ADA for the state of California as a percentage of the total California population increased from 16.8% for 1952-53 to 22.4% in 1963. This change in itself, even if there had been no change in total population would have increased the school enrollment for the state by one-third. Since a similar change apparently occurred in Solano County, and therefore probably also in the Vallejo Unified School District, the expected decline in ADA for the school district of Vallejo as a result of decreased population and employment was partially offset by an increase in the proportion of school-age children in the population.

Changes in the Composition of the ADA

Changes in the composition of the ADA have generally been much more pronounced than have the changes in the total ADA.

Federally Connected Students by Place of Parents' Employment

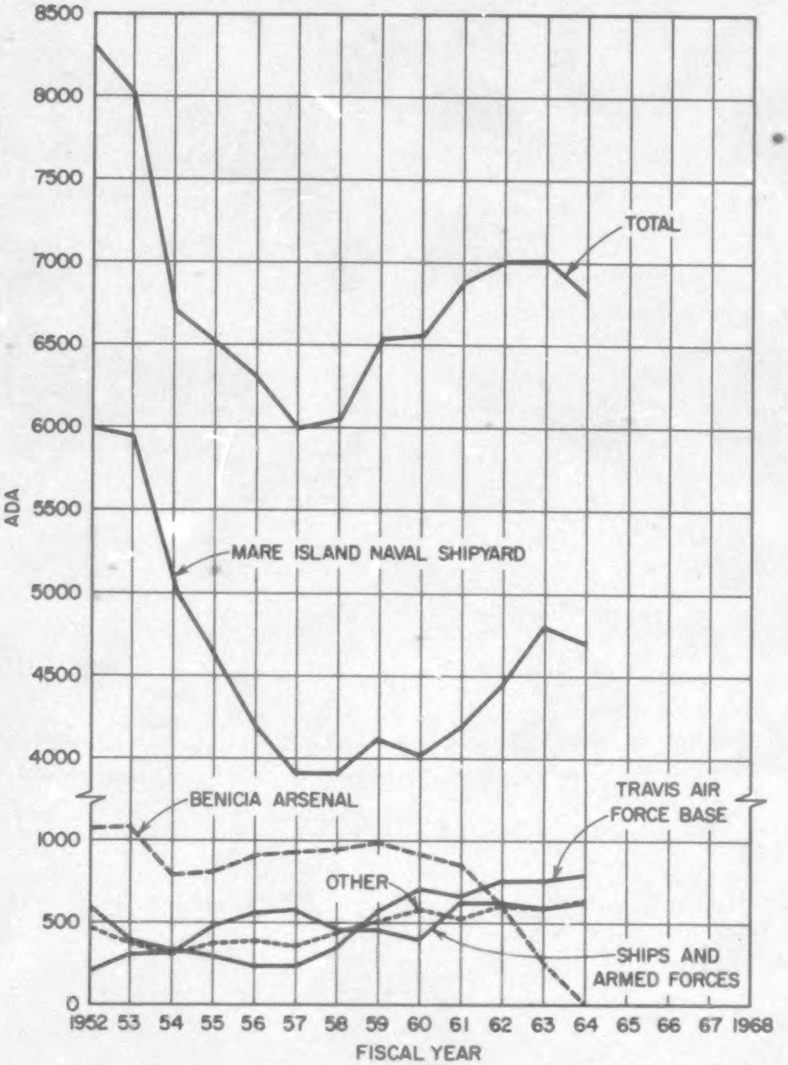
As shown in Chart V2 the major influence on the number of federally connected students as a result of employment has been the activities of Mare Island Naval Shipyard. The proportion of total 3(a) and 3(b)2 students accounted for by the shipyard ranged from 72% in 1951-52 to 65% in 1956-57, and 70% in 1963-64. The effect upon 3(a) and 3(b)2 ADA of the decline in Mare Island employment was dampened slightly after the Korean war by the relatively greater stability of the entitlement resulting from other federal activities in the area. Although almost all of the other sources of Vallejo's 3(a) and 3(b)2 entitlement decreased from 1952 to 1954, the rate of change was generally less than that for the shipyard. Since 1954, entitlement resulting from these other federal activities, generally increased, with the exception of Benicia Arsenal. The decrease in entitlement as the result of the closing of Benicia Arsenal in 1964 was more than offset by increases in the number of students resulting from the other sources of federal employment. The shipyard accounted for the major portion of this net gain during the 1960's. The very rapid increase in employment at Travis Air Force Base which was occurring at approximately the same time did not seem to have a very large impact upon the Vallejo Unified School District. From 1958 to 1963, civilian employment at Travis increased from 700 to 2,000; and military employment from 4,300 to 13,700; whereas the Vallejo ADA attributed to Travis increased only from about 350 to 790.

Federally Connected Students by Sections of P.L. 874

The changes in the number of federally connected students by sections of the law are illustrated in Chart V3. The number of 3(a) students and 3(b)1 students has decreased markedly while the 3(b)2 students have increased both in absolute numbers and as a proportion of the total federally connected ADA. Whereas in 1953, 3(b)2 students accounted for only about 36% to 39% of the total federally connected ADA, by 1964 they accounted for an estimated 86% of the total.

CHART V2

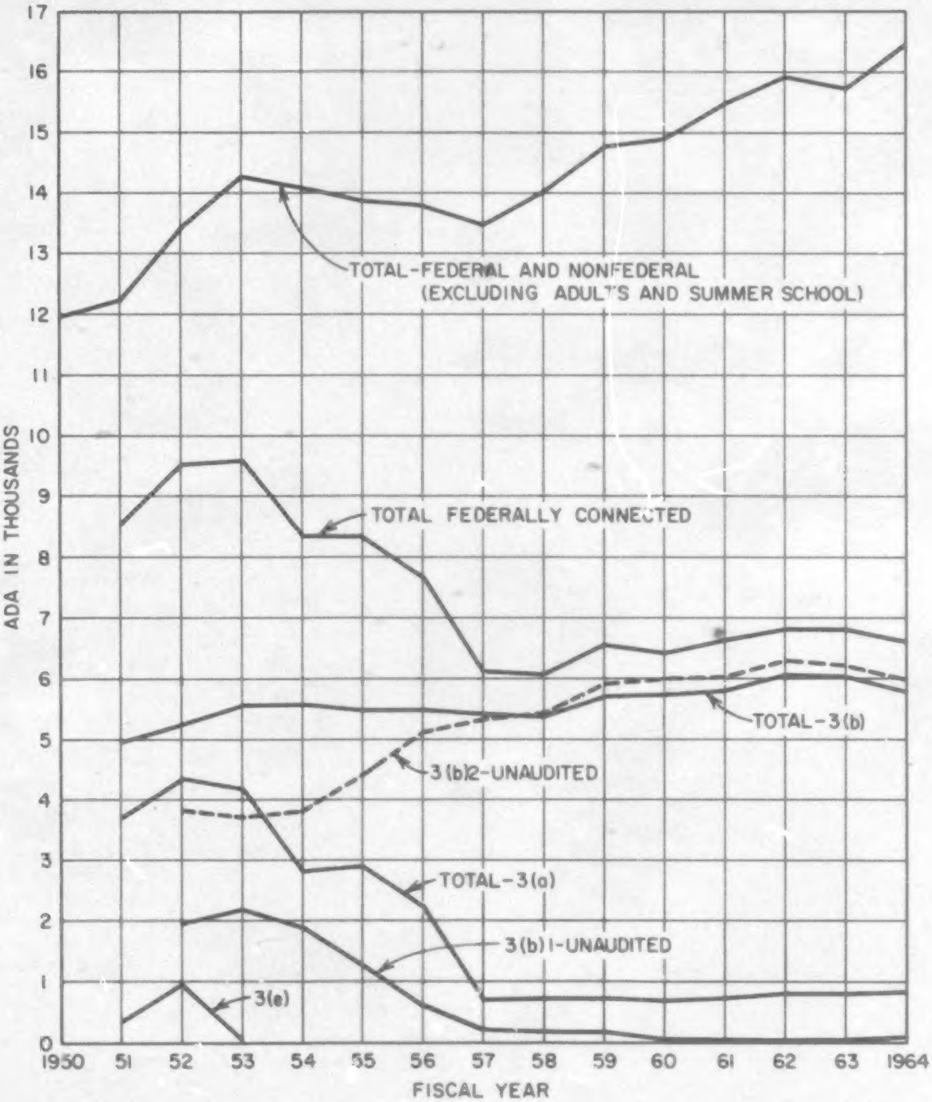
3(a) AND 3(b)2 ADA FOR VALLEJO UNIFIED SCHOOL DISTRICT BY LOCATION OF FEDERAL EMPLOYMENT
FY 1952-1964



SOURCE: Vallejo Unified School District.

CHART V3

FEDERALLY CONNECTED ADA IN THE VALLEJO UNIFIED SCHOOL DISTRICT
BY SECTION OF P.L. 874
FY 1951-1964



SOURCE: Vallejo Unified School District.

Distribution of the ADA by Grade Levels

Changes in the grade level composition of the ADA affect current expense of education per ADA (C/ADA) since the costs associated with educating students in the lower grades are generally less than for junior and senior high school students. Furthermore, rapid shifts in the ADA between different grades create certain diseconomies for a school system since school facilities, equipment, and teachers tend to be specialized on the basis of grade levels.

The changes in ADA by grade levels in Vallejo have been quite different from the changes in total ADA for the school district. From 1949-50 through 1952-53, the ADA for kindergarten and the elementary grades increased at a more rapid rate than did the ADA for junior and senior high schools; together, they accounted for almost three-quarters of the total increase in ADA for grades K-12. Although the ADA for the lower grades also grew at a disproportionate rate in the state of California in the same period, the rate of growth was much greater in Vallejo. It would appear, therefore, that an above-average proportion of the families who came to Vallejo during the Korean war were families with relatively young children.

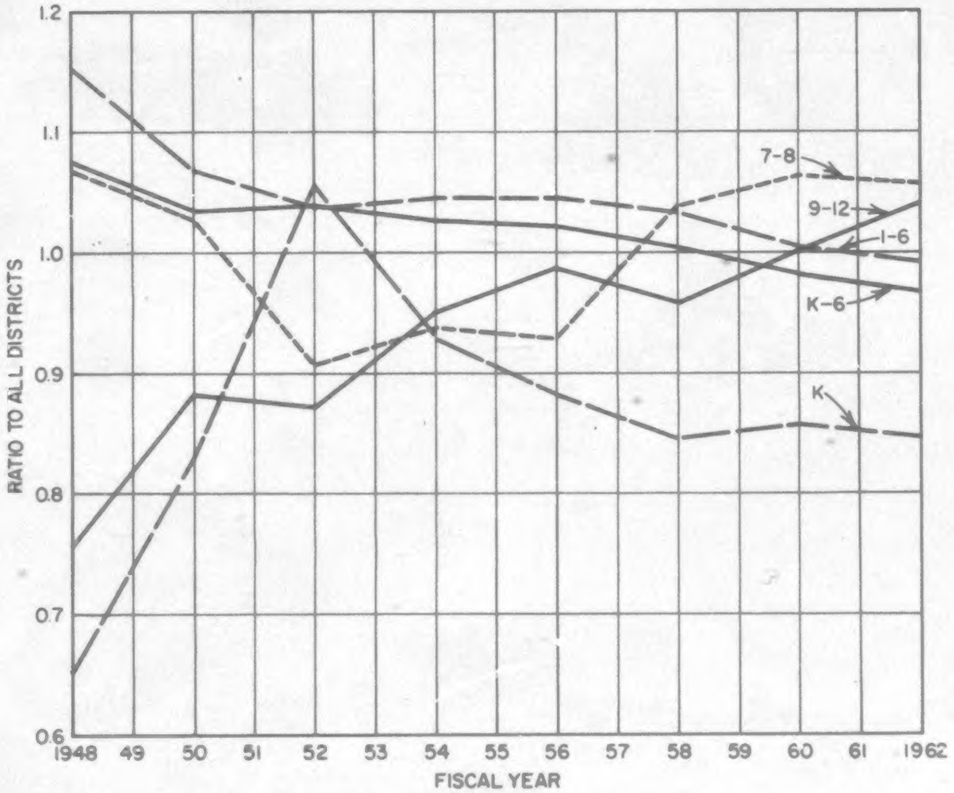
During this period of growth in total ADA, attendance at the junior college fluctuated widely. Between 1949-50 and 1951-52 attendance dropped by 45%, but by the 1952-53 school year had returned almost to its 1949-50 level.

After 1953, total ADA decreased, reaching its low point in the school year 1956-57. All of the drop in K-12 ADA occurred in grades K-6 and mostly in kindergarten and first grade. After 1957, ADA by different grade levels has generally increased without interruption, with the highest rates of increase occurring in junior high school, high school, and junior college.

The composition by grade level of total ADA in Vallejo is compared to the state of California in Chart V4 for the period 1947-48 to 1961-62. Vallejo had a higher proportion of its ADA in grades K-6 than did the school systems of California until the end of the 1950's. This high proportion of ADA in grades K-6 was almost entirely due to the enrollment in grades 1-6. The kindergarten ADA has historically been below the state norm, except for 1951-52. On the basis of ADA the proportion of Vallejo students who were in grades 9-12 was fairly low until 1960.

CHART V4

ENROLLMENT BY GRADE LEVELS IN VALLEJO UNIFIED SCHOOL DISTRICT
COMPARED WITH STATE OF CALIFORNIA
FY 1948-1962



SOURCE: Vallejo Unified School District and Biennial Survey of Education in the United States, Office of Education.

Student Turnover During the School Year

The rate of student turnover during a school year appears to be quite high in Vallejo, particularly where federally connected students are involved. Enrollment statistics for selected years are given in Table V3 for (1) two elementary schools composed largely of students whose parents work at Mare Island, and (2) the junior and senior high schools attended by these children when they move on to a secondary school. The annual turnover rate is particularly high at the elementary schools and was hardly less in 1955-56 or 1960-61 than during the time of the Korean war. The rate of turnover for the junior and senior high schools was also high, although not as great as for the elementary schools. This lower rate of turnover is partially the result of these schools' having a smaller proportion of federally connected students than the elementary schools shown in the example, since the high schools draw their students from a larger geographic area within Vallejo. Student turnover of this magnitude results in unstable class sizes and also rapid change in the student composition of the classes.

Table V3

ENROLLMENT CHANGES DURING THE SCHOOL YEAR FOR SELECTED SCHOOLS AND SELECTED YEARS

Year and School	Beginning Enrollment	Additional Enrollment	Enrollment Losses	Closing Enrollment
1951-52				
Federal Terrace Elementary School	1,186	521	767	940
Mare Island Elementary School	306	304	410	200
Vallejo Junior High School	1,088	373	452	1,009
Vallejo Senior High School	906	336	352	890
1955-56				
Federal Terrace Elementary School	549	204	197	556
Mare Island Elementary School	509	496	729	276
Vallejo Junior High School	1,048	94	150	992
Vallejo Senior High School	1,248	167	346	1,069
1960-61				
Federal Terrace Elementary School	829	322	383	768
Mare Island Elementary School	322	517	532	307
Vallejo Junior High School	1,260	111	188	1,183
Vallejo Senior High School	2,438	172	386	2,224

Sources: Vallejo Unified School District Enrollment Records, 1951-52, 1955-56, 1960-61.

III INFLUENCE OF FEDERAL IMPACT AND P.L. 874 ON THE EXPENSE, LOCAL EFFORT, AND QUALITY OF EDUCATION IN VALLEJO

Changes in the educational demands placed upon the school district since 1947-48 have been discussed in the previous section and, where possible, were related to the changes in federal impact occurring in the community. The effect of these changes and of the receipt of funds from P.L. 874 are discussed in this section.

Influence of Federal Impact upon the Cost of Education

There are a number of differences in the cost of education in Vallejo as a result of federal impact, although they cannot be easily quantified. Records are not maintained by the district for collection of costs specifically associated with federally connected students, nor are there specific statistics maintained to indicate the extent to which federally connected students differ from the nonfederal students. Nevertheless, indications of the influence of impact upon costs can be deduced from the changes in demands on the school district that occurred as a result of changes in the extent of federal impact. Furthermore, since Vallejo, throughout its history, has always been heavily dependent upon federal activities, inferences as to the effect of impact on school costs can be made on the basis of the differences between Vallejo and the norm in school and community characteristics.

Federal impact has not been consistent in its effect on the costs of education in Vallejo: certain aspects of impact have tended to increase costs while other have decreased costs. Furthermore, a particular aspect of impact sometimes has had opposite effects upon costs, depending upon the point in time being considered.

The following factors relating to federal impact have tended to increase the costs of education in Vallejo either on a per family or per ADA basis:

1. There is a high proportion of public school students per family in Vallejo. (See Table V4.)

Table V4

ESTIMATED NUMBER OF CHILDREN PER FAMILY IN PUBLIC SCHOOLS IN THE CITY OF VALLEJO AND STATE OF CALIFORNIA, BY AGE GROUP

1960

	Vallejo		California
No. of children age 6-14	10,517		2,681,080
Percent in public school	92.8%		89.3%
No. in public school	9,760		2,394,204
No. of children age 15-18	3,718		897,096
Percent in public school	91.8%		89.7%
No. in public school	3,413		804,695
Total age 6-18 in public school	13,173		3,198,899
No. of families	15,725		3,991,500
Public school pupils per family	0.838		0.801
Ratio of Vallejo to California		1.05	

Source: Based on U.S. Census data.

2. The administration of P.L. 874 increases the work load placed upon the staff of the school district because of the special records required, etc.

3. The fluctuation in the number, composition, and location of students in the district as a result of federal action makes it difficult to plan for future school needs and requires greater administrative effort to anticipate future changes.

4. Because of the impossibility of being able to anticipate accurately future school needs, the facilities and teacher personnel of the district are not always used most efficiently. For example, when enrollment drops unexpectedly during the school year, there are more teachers than are necessary and the cost of instruction per ADA increases. The number of teachers cannot be reduced in proportion to the reduction in enrollment during the year because (a) classes would have to be consolidated and therefore teacher continuity for the student would be interrupted, and (b) the teachers are generally under contract for the entire school year.

5. The high rate of student turnover during a year increases the number of administrative decisions that must be made and complicates the various record-keeping tasks of the district.

6. It is felt by those in the district that the attraction of teachers is made more difficult because (a) the uncertainty of school district needs reduces the job security of the teachers; (b) the high student turnover and resultant changes in the composition of a class discourage teachers, since most teachers prefer to work with approximately the same group of students for a period of a year; and (c) the setting of teachers salaries is delayed, since the total amount of money available for current salaries or increases is not known until just before the school year starts. These difficulties in hiring teachers may sometimes have resulted in a higher salary being offered to a particular teacher than would otherwise have been necessary.

7. The disproportionate reduction in the ADA in the lower grades, between 1952-53 and 1956-57, resulted in an increase in the percentage of the students in higher grade levels, which have higher education costs.

8. The personnel and facilities of the junior college could not be used for the instruction of the increased number of elementary

school students that occurred during the Korean war, even though the ADA of the junior college declined at the same time.

The following factors would have tended to decrease the cost of education in Vallejo:

1. There was a high proportion of the ADA in grades K-6 in Vallejo until 1960.

2. A high percentage of the increased enrollment occurring during the Korean war was in the lower grades of the school system, which have lower education costs.

3. When an unexpected sharp increase in school enrollment occurred, there tended to be fewer teachers per student, with a resultant decrease in the instructional cost per ADA.

4. Since there were double sessions in certain of the elementary schools for the period 1949-50 through 1960-61 and in certain of the secondary schools for the years 1951-52, 1952-53, and 1958-59, the cost of operating the school plant per ADA may have been lowered because of this double usage of facilities. Furthermore, if certain of the administrative and teaching personnel were able to serve both of the school sessions during each day with little or no increase in their annual salaries, personnel expenses per ADA would have been reduced.

Although the net effect of these increases and decreases in cost of education could not be precisely quantified, a slight increase in costs as a result of federal impact seems likely, on the basis of rough calculations.

Current Expense of Education and the Use of P.L. 874 Funds

In Vallejo, as in other districts, the actual expenditures for education are not only the result of the educational demands placed upon the district but also are dependent upon the revenues available to pay for the education program. As shown in Table V5 both total revenues and revenue sources have changed substantially since 1949-50. Since the income from the different sources has sometimes tended to change in large increments, it is possible to a certain extent to determine how certain of the income sources were actually spent.

Table V5

GENERAL FUND TRANSACTIONS, VALLEJO UNIFIED SCHOOL DISTRICT*
1949-50 to 1962-63
(Dollars in Thousands)

	Income											Expenditures		General Fund Net Ending Balance
	Federal Subventions				State		District & City		Other					
Year	P.L. 874	All Other	Total	% of Total Income	Total	% of Total Income	Total	% of Total Income	Total	% of Total Income	Total	Current Expenditures for Education	Total	
1949-50†	$	$	$	%	$1,922	70.7%	$ 669	24.6%	$129	4.7%	$2,720	$2,623	$2,719	$167
1950-51	750	69	819	22.8	2,057	57.4	688	19.2	23	0.6	3,586	3,422	3,459	330
1951-52	822	185	1,007	25.2	2,245	56.3	709	17.8	29	0.7	3,989	3,602	3,699	594
1952-53	952	181	1,132	26.8	2,268	53.7	796	18.8	31	0.7	4,228	3,941	4,082	828
1953-54	722	153	875	18.9	2,879	62.1	840	18.1	43	0.9	4,638	4,480	4,614	809
1954-55	813	107	920	19.7	2,785	59.8	874	18.8	78	1.7	4,657	4,495	4,704	778
1955-56	749	49	798	17.6	2,749	60.5	941	20.7	55	1.2	4,543	4,708	4,792	547
1956-57	514	45	559	10.9	2,728	53.3	1,763	34.4	73	1.4	5,122	5,162	5,227	480
1957-58	548	30	578	10.2	3,057	54.2	1,883	33.4	121	2.1	5,638	5,283	5,401	714
1958-59	771	0	772	12.7	3,228	53.2	1,920	31.6	154	2.5	6,073	5,729	6,003	784
1959-60	756	0	756	11.6	3,509	53.9	2,108	32.4	136	2.1	6,509	6,342	6,575	668
1960-61	869	0	869	12.8	3,636	53.5	2,160	31.8	125	1.8	6,790	6,756	6,814	645
1961-62	911	0	911	12.6	3,902	53.7	2,315	31.9	133	1.8	7,261	7,305	7,399	517
1962-63	922	0	922	12.3	4,004	53.4	2,455	32.7	123	1.6	7,504	7,451	7,498	541

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* Excludes interfund transfers.

† Federal payments to Vallejo in 1949-50 were not separately listed and may appear under any of the nonfederal categories. Apparently a federal grant of $227,506 was received by Vallejo under the provisions of the Lanham Act.

Source: State Controller's Office, Annual Reports of Financial Transactions Concerning School Districts of California.

Current expense of education per ADA and other selected variables on an ADA basis compared with the state of California are shown in Chart V5. In 1949-50 C/ADA was extremely low, teacher salaries in Vallejo were 18% below the state average (see Table V6), and the end of year balance of the general fund amounted to only $167,114. With the large increase in revenues occurring in 1950-51 the money which Vallejo spent per student was increased substantially and surpassed the state standard. Almost all of this increase in C/ADA was in the form of higher teacher salaries, raising the Vallejo salaries to above the state average. Since the major portion of the increase in revenue was the result of P.L. 874 and since the amount of the increase in total salries was approximately the same as the funds received from P.L. 874 (salary increase of $613,000, P.L. 874 funds of $749,600 in 1950-51), it seems reasonable to conclude that Vallejo used a major portion of its new P.L. 874 money to improve its quality of education by raising salary schedules. As a matter of fact, when the Board of Education applied to the federal government for funds under P.L. 874 in 1951, the Superintendent and Board pledged that "of this fund, 80% will be made available to bolster teacher salaries."*.

From 1950-51 through 1952-53 C/ADA was allowed to decline even though federal revenues increased to 26.8% of total revenues. However, the financial solvency of the district greatly improved, with the end of year balance of the general fund increasing to $828,800 (see Table V5). In 1953-54 the state apportionment per ADA increased from $151 to $198, with the result that C/ADA and teacher salary levels were also able to be increased. In 1956-57 C/ADA rose above the state norm after having stayed at a constant level for the previous two years. At that time the major increase in revenues was the result of district taxes per ADA rising to $125, almost double that of the previous year. Although the teachers' average salaries also rose, a greater increase in salaries occurred in the following year. The next major change in C/ADA occurred in 1960; in this case, however,. teachers' average salaries did not increase significantly. Instead, the number of school personnel was increased by almost 10%, even though the total ADA had increased by only about 2.4% in that year. This increase in C/ADA was not associated with one particular source of revenue change, but appears to have been financed from gains in district taxes, state apportionment, and a reduction in the end-of-year balance of the general fund.

In summary, new sources of revenue were generally used in Vallejo to increase the number of teachers and other professional employees and to

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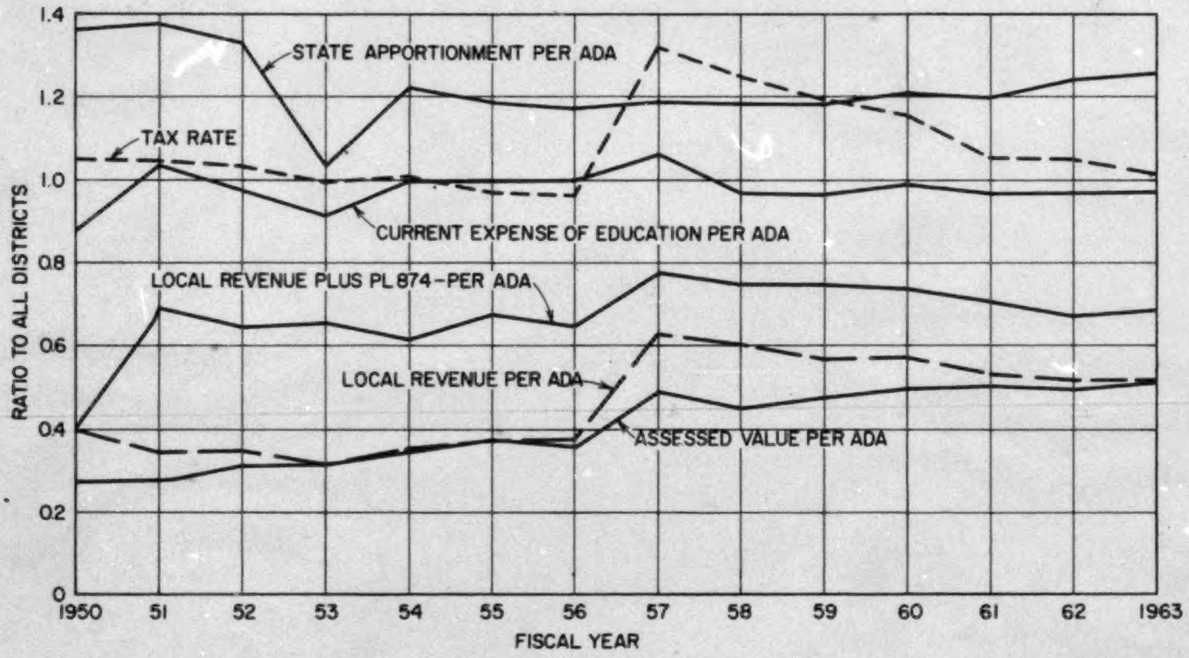
* Vallejo Unified School District Newsletter.

CHART V5

SELECTED VARIABLES FOR VALLEJO UNIFIED SCHOOL DISTRICT AS RATIOS
OF TOTALS FOR ALL DISTRICTS IN CALIFORNIA
FY 1950-1963



SOURCE : *Annual Reports of Financial Transactions Concerning School Districts of California*, Office of the Controller, State of California.

Table V6

CERTIFIED SALARY SCHEDULE AND MEAN SALARY IN VALLEJO COMPARED WITH OTHER CALIFORNIA DISTRICTS 1949-50 to 1964-65

Year	Starting Salary	Percent Increase	Mean Salary	Percent Increase	Average Salaries in Vallejo as a Percent of the California Average*	
					Unified	All Districts
1949-50	$2,700	%	$3,501	%	n.a.	82.0%
1950-51	3,362	24.5	4,352	24.3	↓	n.a.
1951-52	3,362	0	4,399	1.1		105.7
1952-53	3,456	2.8	4,628	5.2		n.a.
1953-54	3,600	4.2	5,005	8.1		104.6
1954-55	3,654	1.5	5,068	1.3		n.a.
1955-56	3,732	2.1	5,431	7.2		103.6
1956-57	3,940	5.6	5,795	6.7		n.a.
1957-58	4,200	6.6	6,469	11.6		107.6
1958-59	4,410	5.0	6,552	1.3		n.a.
1959-60	4,470	1.4	6,807	3.9		103.1
1960-61	4,694	5.0	7,219	6.1	93.4	n.a.
1961-62	4,808	2.4	7,449	3.2	96.6	104.9
1962-63	4,808	0	7,521	1.0	99.0	n.a.
1963-64	4,904	2.0	7,731	2.8	99.8	99.1
1964-65	5,200	6.0	8,475	9.6		

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* California data on all districts do not include salaries for junior college faculty which are included in the data for Vallejo and the other California unified districts.

Sources: California Teachers Association, Research Bulletins. U.S. Office of Education, Statistics of State School Systems. National Educational Association, Rankings of the States, 1964. Stanford Research Institute.

improve their salaries. The greater emphasis placed on the number and salaries of teachers in Vallejo, as compared with all school districts in California is indicated by the higher share of its budget going to these expenditures. Expenditures for instruction as a percent of total current expenditures for education in Vallejo ranged from 74.2% in 1951-52 to 78.2% in 1962-63, whereas the ratio for the state of California was 71.7% and 74.7% for the same years. This relationship was generally maintained throughout that period. P.L. 874 funds were used initially to bring previously low teacher salaries up to state averages. After the first year of P.L. 874, federal funds helped to improve the financial solvency of the district as measured by the end-of-year balances of the general fund and assisted in maintaining the salary levels and C/ADA.

Local Effort to Finance Current Educational Expenses

As shown previously in Chart V5, Vallejo has been reasonably successful in maintaining a current expense of education near the state norm since 1950-51. Maintaining this level of expenditures, however, has required some effort by Vallejo, particularly since the nonlocal sources of income for the district have not always increased in proportion to the increased cost of education. (See Table V5.) Total federal subventions have fluctuated considerably over the years; they decreased by over 50% from 1952-53 to 1956-57, a reduction in their contribution to total income from 26.8% to 10.9%. This reduction was the result of a decrease in the number of federally connected students and a substantial shift from 3(a) to 3(b) entitlement. State apportionment funds received by Vallejo have also varied over the years, although to a much smaller degree. The effort and ability of Vallejo to adjust to changes in nonlocal revenues and increasing costs of education are closely related to assessed values and the school tax rates.

Assessed Valuation of Taxable Property

The assessed valuation of taxable property in the Vallejo Unified School District is very low, amounting to only $2,106 per ADA in 1950 and $4,231 per ADA in 1963; compared with the state of California, they have increased from 27.3% to 50.3% of the state norm during this period. This relative increase in assessed values has to a large extent been due to a major change in assessment practices which occurred in 1956. Assessment responsibilities for Vallejo were transferred from the city to the county at that time, resulting in sharp increases in assessments in fiscal 1956-57. Since 1956, assessment values have ranged between 22.5% and 24.7% of market values. A second factor affecting the assessed values has been the reduction in federal housing, discussed earlier. The removal of federal housing reduced the amount of tax-exempt properties and stimulated a relatively high level of private residential construction, particularly during 1954 and 1955. In addition, there has been a fair degree of building activity throughout the period of this study, particularly since 1957. Building permit evaluations for Vallejo have ranged from $5-10 million per year, even though the population of the community has not been changing to any great extent. Furthermore, property values in general throughout California and in Vallejo have been increasing at a regular rate.

Even though the situation has been improving over time, assessed values per ADA in Vallejo are still quite low, primarily because of the high proportion of tax exempt properties, the low ratio of business properties, and the low rate of spending on housing by local residents.

Properties Exempt from Assessment or Taxation

A major explanation of the relatively low assessed value of taxable property in Vallejo is the large amount of federal property in Vallejo that is tax exempt. The Mare Island properties of the federal government include approximately 2,500 acres of land which the Naval Yard authorities value at $7.5 million. Even of greater importance is the large amount of additional capital employed on these properties, since capital intensive operations are involved. The total replacement value of the Mare Island installation is estimated by Naval Yard authorities to amount to $380 million. If one-fourth of this is taken to be its assessed value, it would be equal to more than the present total assessed value of the Vallejo school district. The Solano County Assessor moreover believes that the true valuation is much higher, and has roughly guessed the shipyard's value is around $1.25 billion. Besides the Mare Island installation, the naval housing in Vallejo is exempt from taxes, and in earlier years, there was also a large number of federal public housing units located in the district which were tax exempt.

There are other exemptions not related to federal activities which lower the amount of assessable property, principally veterans' exemptions, exemptions accorded to churches, welfare, and related organizations. These are relatively small, amounting to $5-6 million in assessed value in recent years and are not out of proportion to similar exemptions in most of the other California school districts.

Low Ratio of Business Properties

Information on the exact share that business property contributes to total assessable property is not available. However, it has been roughly estimated to amount to between 15 and 20% of assessable property in the Vallejo school district. This low ratio is in part due to the extremely small amount of private manufacturing activity in the district.

A further explanation is that the employment activities of residents locally employed in assessable enterprises are primarily trade and service industries of a relatively low capital intensity. Also, a major share of the capital of many of these enterprises is in inventories or light equipment which in part tend to escape assessment. A small offsetting factor is that Vallejo's trade and service enterprises are able to attract about 10% of their revenues from business with residents of other areas, which results in their assessed value being somewhat larger than it would be otherwise.

Low Rate Spending on Housing

A relatively low rate of spending on housing by local residents also contributes to the low assessed value in Vallejo. The median income in Vallejo as previously indicated in Table V2 was 1.8% below the California average in 1960. The median value of owner occupied houses in Vallejo in 1960, however, was 17.9% below the California average, and the median rent of occupied units, 16.4% less than the California average. Some local residents speculate that this lower family expenditure on housing may derive from the temporary nature of residence in the case of the employees of federal installations, particularly of the military personnel, and the general uncertainty of all the residents about the long term future of federal employment in the community. However, these reasons do not necessarily explain the low rents paid by the residents.

Property Tax Rates

As shown in Chart V5 the general purpose tax rates for Vallejo Unified School District were slightly above the state norm in 1951 and then declined slowly relative to the state until 1957. The actual tax rates changed only very slightly from $2.10 per $100 of assessed value in 1950 to $2.15 in 1956. This rate was slightly above the state's theoretical maximum level of $2.00. However, the California Legislature has from time to time enacted statutes enabling school boards to levy additional taxes to be used for special purposes, without securing voter approval.

The citizens in California school districts may tax themselves at a greater rate than the state ceiling if a majority of voters approve. In 1956 the Vallejo Board of Education reviewed the fiscal situation and proposed a $1.00 increase in the tax rate. This decision was reached because of the declining revenues from state and federal sources, the substantial reduction that had been occurring in the end-of-year balance for the general fund for the last three years, and because salaries of instructional personnel had only been able to be increased by 1.3% in the preceding year. The voters approved the tax increase proposal but only by the narrow margin of 678 votes out of a total 9,294 cast. As a result of this increase in the tax rate, Vallejo's general fund tax rate increased from 95.9% of the state rate in 1955-56 to 132% in 1956-57.

Since the increase in tax rate of 1956 had only been requested for a five-year term, the Board submitted to the electorate in February 1961 a request to continue the 1956 rates. At this time the tax rate increase was approved by a more substantial margin (a two-thirds yes vote when only 50% was necessary). By the time of the 1961 vote the tax rate of Vallejo relative to the state had declined to a rate only a little above average, so that the previous four years of high local effort were not continued.

In evaluating Vallejo's tax effort, account also should be taken of the burden of other taxes. Vallejo has had special local government tax problems arising from federal activities and these have fallen in part upon property. These have especially affected the municipal government. The crux of the city's problem, just as for the school district, has been the low assessed valuation of property. In 1963, assessed valuation per capita in Vallejo was only $1,104 per capita as compared with an average of $2,010 for 382 California cities, and its situation has been relatively worse in most other years.

The city, unlike the school district, receives no compensating payments from the federal government because of the exemption of federal properties. The exemption of federal properties from municipal taxes can be partially justified, in that they do not contribute in themselves to city costs to the same extent that private enterprises do. The federal operations on Mare Island are self-contained and require little direct service from the city, other than water, which it purchases from the city. Similarly, most of the federal housing projects were outside the municipal boundaries and also directly provided their own services, except for those such as water and fire protection, which they contracted from the city.

Federal activities indirectly have had major impact on city costs and budget management. Federal operations, particularly during wartime, have increased the city's residents without a fully compensating increase in the property tax base. In addition, large new population concentrations just outside the city's boundaries result in traffic to and through the town which increases street maintenance, police requirements, and other government costs. City government and community interest in municipal matters, moreover, have tended to deteriorate under wartime conditions when the city is congested with a large temporary population.

As the result of its low amount of assessable property and special municipal costs, at least during periods of major changes in the level of federal activities, the city has had to maintain a fairly high level of property taxes and to develop other sources of revenue.

Vallejo since 1950 has been among the upper third of California cities, ranked by level of property tax rate. The combined municipal and county property tax rate is almost equal to school district rate and has been higher in earlier years. There appears to be a somewhat greater problem of competition between local government and the school district for property revenues in Vallejo than in most districts.

Economy Effort

Because the funds available per ADA have been somewhat limited, Vallejo has attempted in various ways to achieve operational economics, while trying to minimize any detrimental effects upon the quality of the instruction offered. The economy effort of Vallejo is reflected by the relatively low proportion of the district's current expense of education which is spent for noninstructional costs (21.8% for Vallejo and 25.3% for California in 1962-63).

Cutback in Transportation

While many U.S. residential communities have sought a more liberal transportation policy, Vallejo has on several occasions decreased the number of students eligible for bus transportation to school. Vallejo, by increasing the walking distance, especially for secondary school pupils, has effected a savings in mileage costs. The distance beyond which senior high school students had to live to qualify for transportation was increased in several stages from 2 miles in 1957-58 to 3 miles in 1962; the distance for junior high school pupils was increased in the same period from 1-1/2 miles to 2-1/4 miles and for elementary from 1 mile to 1-1/2 miles. Junior college students ceased to be transported in 1957. Transportation costs have nevertheless tripled between 1950-51, but in the absence of the foregoing measures, they might have risen even more. The replacement of the densely populated clusters of federal public housing by low density subdivisions and the increase in the ratio of secondary to elementary school students caused a substantial growth in the transportation demands of the district.

Decrease in Guidance Services

With the help of P.L. 874, Vallejo's secondary schools were able to lower the ratio of guidance counselors to students from 1:324 in 1949-50 to 1:266 in 1951-52. By 1957-58, this low ratio could no longer be maintained and the number of counselors was reduced from 24 to 18, raising the ratio back to its 1949-50 level. Since 1962, the ratio has stabilized at approximately 1:350. Compared with other California school districts (of all types), Vallejo has had and still has a relatively high ratio of guidance and counseling staff to total instructional staff, but its lead has been greatly reduced since 1955-56 owing not only to the indicated decline in the Vallejo ratio but also to a rising ratio in California as a whole (1:18 and 1:27 for Vallejo and 1:124 and 1:66 for California in 1955-56 and 1961-62 respectively).

Other Staff and Student Services

Vallejo has attempted to keep the size of the staff of the central office to a minimum. For instance, a deputy superintendent doubles as director of personnel, assisted by a chief personnel clerk; only one psychologist is employed to serve 17,000 students; and the school welfare and attendance staff work and are paid for nine months rather than the full year.

The number of consultants, supervisors and other administrators and program coordinators from 1950 to 1964 has increased from 15 to 17, or roughly by 13%, while total instructional staff and ADA have risen by 42% and more complex programs have been adopted. The effect of this has probably been to decrease coordination and the amount of central staff assistance to teachers. The 19 special classes--for the retarded, the handicapped, and other categories--have no special supervisor; other central office staff members divide responsibility for the supervision of the special classes. Although the ratio of classroom teachers to total instructional staff remains below the average for all California schools, it is believed to be higher than that for other unified schools. However, while this ratio has gradually declined in the case of all California school districts, it has risen substantially in Vallejo since 1955-56.

The Quality of the Education

The general pattern of Vallejo's expenditures per ADA is suggestive that Vallejo has been able to maintain and generally improve the educational services extended since the enactment of P.L. 874. Higher expenditures per ADA, however, do not necessarily mean improved education per pupil, particularly in periods of sharply rising or falling enrollment when costs may be increased abnormally. Nevertheless, teachers' salaries have been able to be raised and have been maintained at approximately the same level as the average for California. However, even though educational expenditures in Vallejo have substantially improved since 1950, the current expense of education has still generally remained slightly below the state norm (see Chart V5).

Class Size

Vallejo has had a higher ratio of pupils per classroom teacher than the average for California (see Table V7). Based upon ADA's statistics since 1950, Vallejo has averaged about two to four more students per teacher than California, with the largest gap occurring during the Korean war. The student/teacher ratio in Vallejo is about the same today as it was prior to P.L. 874 even though the ratio has tended to decrease elsewhere in the state. Data on pupils per classroom in Vallejo show an increase in the ratio during the Korean war with a fairly steady reduction thereafter.

Library Books

The American Library Association (A.L.A.) until the early 1960's recommended five books per child as a "standard" for all school libraries; more recently the A.L.A. standard has been raised to ten library books per child.

Vallejo in 1962-63 had 37,268 volumes in the seventeen elementary schools for 9,133 children, or more than four books per child.

Vallejo secondary schools had libraries of from 6,000 to 12,000 for the junior and senior high schools at ratios ranging from just over 5:1 at the senior high schools to over 9:1 at one of the junior high schools. The Vallejo Board of Education has made a deliberate effort, especially in recent years, to build up the school library collections. They still, however, are below the current A.L.A. standard.

Student Performance

Data on student performance in the Vallejo school system are limited. The district maintains no office of research for the collection and analysis of pertinent data on students. The guidance office is understaffed

Table V7

AVERAGE ADA PER CLASSROOM TEACHER
IN VALLEJO AND THE STATE OF CALIFORNIA
1949-50 to 1963-64

	Average ADA per Teacher in:		
	Vallejo		
Year	Including Junior College	Excluding Junior College	California*
1949-50	31.1	n.a.	29.5
1950-51	33.3		n.a.
1951-52	32.7		28.7
1952-53	33.8		n.a.
1953-54	32.3		29.2
1954-55	32.9		n.a.
1955-56	31.9		28.0
1956-57	30.4		n.a.
1957-58	31.8	31.5	28.3
1958-59	32.2	32.9	n.a.
1959-60	30.1	29.9	27.6
1960-61	31.2	31.2	n.a.
1961-62	30.6	30.3	28.3
1962-63	31.7	31.6	n.a.
1963-64	30.9	30.4	n.a.

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* Excludes junior college and adult students and teachers.

Source: Stanford Research Institute, based on data provided by the Vallejo Unified School District and on data in U.S. Office of Education, Digest of Educational Statistics.

and publishes no annual summaries or reports of performance. Only one follow-up study of students over time has been conducted. This dropout study covered 914 students beginning grade 7, and 629 who moved into the district during the six years of secondary school. It found that of these 1,543 potential candidates for the graduating class of 1962, 503 transferred to other schools leaving 1,040 possible graduates. A total of 678 graduated and 362 dropped out of school, a high dropout rate.

The Director of Guidance estimated that 7 to 10% of each graduating class take up studies at four-year colleges or universities, and 45% attend junior college in Vallejo for one or two years. This estimate that 55% of graduates in Vallejo enter some form of college can be compared with an estimated 45% of the 1963 high school graduates in the United States who were enrolled in college full or part time in October 1963.*

Profile summaries of student aptitude and achievement scores for grades 8 and 11 indicate that students in Vallejo score at about the median level for American students in grades 8 and 11, although those in grade 11 rank slightly above the median in case of reading and arithmetic achievement scores.

The Adequacy of P.L. 874 Funds in Meeting the Educational Requirements of Vallejo

The formula used in other portions of this study for evaluating the adequacy of P.L. 874 funds was not applied in Vallejo primarily because (1) a breakdown of assessments by types of property was not available and (2) the heavy dependence of Vallejo upon federal activities made it impossible to adjust accurately the equation to reflect what would have been the normal revenues produced by local residents if there had never been any federal activity in the community.

An indication of the adequacy of P.L. 874 funds is provided in Chart V5, however. If the intent of P.L. 874 is to provide sufficient funds to make the total of local and federal funds in the impacted school district (assuming a reasonable level of local effort) approximately equivalent to the local revenues able to be raised by nonimpacted communities, then the P.L. 874 funds received by the Vallejo Unified School

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* U.S. Department of Labor, Bureau of Labor Statistics, "Monthly Labor Review," May 1964, cited in Office of Education, Digest of Educational Statistics, p. 145.

District have been inadequate. Even though the tax rate of the district has generally been as high as the state average, and at times substantially higher, the total local revenue including P.L. 874 funds has remained well below the state norm. The burden of this gap has been largely placed upon the state of California, which has paid Vallejo a much higher rate of apportionment per ADA than the state average.

The reason, of course, why local district revenue has been so low is that the assessed value in Vallejo is extremely low. Even if the apparent low rate of spending on housing by Vallejo residents is not attributed to the federal government, the revenue potential from property taxes is still extremely limited because of the large amount of tax-exempt federal properties.

IV PUBLIC LAW 815

Vallejo had received substantial help from the federal government for the construction of schools during the depression of the 1930's and especially during World War II, when $1.8 million of construction funds for 9 schools were obtained under the Lanham Act. In 1950, prior to the availability of P.L. 815 funds, and after Lanham Act funds ceased to be available, Vallejo found it necessary to raise additional construction funds. In 1949-50, a severe shortage of space at the elementary level already existed and was intensified by the increased activities of Mare Island in 1950. Voter approval was therefore sought for the issuance of $2.5 million in bonds, and the legal two-thirds affirmative vote was obtained with comparative ease. These funds were largely used on new construction during 1951 and 1952. Building space, however, remained inadequate at the elementary level and a space shortage also had arisen at the secondary level by 1951.

During the early 1950's, $5.7 million was made available to Vallejo for school construction under P.L. 815. Seven new elementary school plants, a junior high, a senior high, several additions, and an administration center were constructed from these funds. About two-thirds of the buildings were constructed during 1953 and 1954, and eliminated most of the overcrowding stemming from the increased enrollment of the preceding years. Some double sessions, however, continued to be required at the elementary level.

No classrooms were added in 1955 or 1956, although in the latter year an auditorium maintenance building and an administrative building were constructed. By 1956 most of the federal housing had been closed and new developments were being constructed in sections of the town that previously had only a few school children. Several of the schools became overcrowded and one of the old federal housing school buildings, Bay Terrace, was condemned as unsafe. Double sessions in elementary schools rose to a new peak, exceeding even the levels of the Korean war period. The remaining entitlement of P.L. 815 funds of a little over $1 million was expended on three schools during 1957.

In early 1956, the School Board had also sought voter approval for a $3 million construction bond issue. The issue was defeated by seven percentage points, having gained a clear majority but not the requisite two-thirds approval. A second election in November 1956 at the time of the Presidential balloting narrowly lost, with 65.93% of a large turnout of 22,870 giving their approval. A third vote in 1958 for a greater amount (since new junior high schools were needed to alleviate double sessions at the secondary school level) was defeated again by about 7%. In 1960 the citizens and school officials arranged for 300 block meetings to explain the need for new construction, and fifty teachers carried on a door-to-door canvas for citizen support of the bond proposal. The bond issue was approved in 1960 by less than a percentage point of margin. Since 1961, double sessions have not been required at either the elementary or secondary level and the number of pupils per classroom has been lower than in most of the preceding years.

Assistance under P.L. 815 has met important construction needs in Vallejo, arising to a major degree from federal activities. The initial needs from the Korean war expansion were met, however, only after crowding had continued for two years. P.L. 815 funds were not available to meet some of the new needs resulting from the changing locational and grade level requirements in the late 1950's. These needs in part arose because of the removal of federal housing and in part because of the changes arising from the aging of both the population and the school building facilities. There are no provisions in P.L. 815 making such needs eligible for federal construction assistance.

The extent to which P.L. 815 funds have substituted for local effort which would have otherwide been forthcoming cannot be accurately gauged. It is evident, however, that much of the opposition to the defeated bond elections arose because citizens were convinced by the role of federal activities in the area and past federal assistance that in order to finance construction, "all the Board needed to do was to send the Superintendent to Washington and he would be able to persuade officials to release the funds." It took a major informational campaign and several elections to persuade enough voters that Vallejo must meet further construction financing requirements through its own efforts.

As of 1964, Vallejo had used only 44% of its total bonding capacity of $12 million. Because Vallejo has been able to finance so much of its construction needs from federal funds and has not fully utilized its bonding capacity, it has not made use of state loans which might otherwise have been obtained to finance construction.

V SUMMARY AND CONCLUSIONS

The major findings of the case study on the Vallejo Unified School District are:

1. The community and the school district of Vallejo are heavily dependent upon federal actions. Over half of all the jobs in Vallejo were in the government sector in 1964 and the proportion was even higher in earlier years. The share of school enrollment directly resulting from federal activities has also been high, although it has declined from 71% in 1951-2 to 40% in 1963-64. Federal subventions, consisting mostly of P.L. 874 funds, contributed 27% of total revenue in 1952-53, but now account for only about 12%.

2. Total ADA and federally connected ADA have fluctuated markedly but not to so great an extent as have local federal employment and housing. The greatest changes in ADA, particularly by grade levels, occurred during and shortly after the Korean war, and created a number of hardships upon the district, including high pupil/teacher ratios and double sessions.

3. Federal impact has probably tended to increase slightly the relative cost of education in Vallejo.

4. P.L. 874 funds were used initially to bring previously low teacher salaries up to state averages. After the first year of P.L. 874, federal funds helped to improve the financial solvency of the district and assisted in maintaining the salary levels and C/ADA near the state norm.

5. Assessed values per ADA are extremely low in Vallejo, primarily because of the high proportion of tax-exempt federal properties in the district and the apparent low rate of spending on housing. The local effort as measured by school tax rates has been somewhat above average. However, Vallejo did not make any unusual effort or sacrifice except from 1956-57 to about 1959-60 when otherwise the district would have been in serious financial difficulty.

6. The P.L. 874 funds received by Vallejo have been insufficient to raise the total of local and federal funds per ADA to the level of local revenues raised by nonimpacted communities.

7. The burden caused by the inadequacy of federal and local revenues has been largely placed upon the state of California. State apportionment per ADA in Vallejo has generally been about 20% above average, even though the state takes into account a portion of federal funds in determining its equalization payments to a school district.

8. In-lieu-of-taxes payments based upon the value of federal properties in the district would have amounted to considerably more than the P.L. 874 payments actually made to Vallejo.

9. In spite of the large proportion of total district revenue obtained from federal and state sources, the educational services provided in Vallejo are somewhat below average when measured in terms of C/ADA, the number of students per classroom teacher, and similar factors.

10. Slightly over half of the construction funds in Vallejo since 1950 were derived from P.L. 815. As a result, the district has had to use only about half its bonding capacity and even then, difficulty was experienced in obtaining voter approval of the bonds needed for school construction.

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